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ABSTRACT

The purpose of this study was to estimate the costs to the nation of the inadequate education of a substantial portion of the population, where an inadequate education for the latter third of the twentieth century was defined as an attainment of less than high school graduation. Using data from the Department of Commerce and other sources in conjunction with extensive research literature from the social sciences, this report obtained the following findings: (1) the failure to attain a minimum of high school completion among the population of males 25 to 34 years of age in 1969 was estimated to cost the nation 237 billion dollars in income over the lifetime of these men, and 71 billion dollars in foregone government revenues; (2) in contrast, the probable costs of having provided a minimum of high school completion for this group of men was estimated to be about 40 billion dollars; (3) welfare expenditures attributable to inadequate education are estimated to be about three billion dollars each year and are probably increasing over time; (4) the costs to the nation of crime that is related to inadequate education appears to be about three billion dollars a year and rising; and, (5) inadequate education also inflicts burdens on the nation in the form of reduced political participation and intergenerational mobility, as well as higher incidence of disease. It is difficult to attempt any monetary estimate of these costs. (Author/JM)

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92d Congress
2d Session

COMMITTEE PRINT

THE EFFECTS OF DROPPING OUT

SELECT COMMITTEE ON
EQUAL EDUCATIONAL OPPORTUNITY
UNITED STATES SENATE

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PREFACE

Because of considerable public interest in Henry Levin's study, "The Costs to the Nation of Inadequate Education" printed by the Select Committee on Equal Educational Opportunity in February 1972, the Select Committee is releasing this print, "The Effects of Dropping Out." This print includes Dr. Levin's study along with excerpts from *Youth in Transition, Volume III, Dropping Out—Problem or Symptom?* by Jerald G. Bachman of the University of Michigan. Dr. Bachman's study provides further discussion on the relationship between high school dropouts and occupational attainment. These studies and related correspondence between Professors Bachman and Levin are reprinted here for the use of the members of the Select Committee and others who may find them of interest.

FOREWORD

Nearly 60 million Americans are enrolled in elementary and secondary schools, colleges and universities. The formal education which these young citizens are receiving is probably the most important determinant for their future. Yet, for millions, our public education system fails to prepare them for adulthood and for a productive life with full opportunity.

As the Select Committee has studied problems relating to equal educational opportunity it has become clear that inadequate education is costly to our society in both economic and social terms. In an effort to analyze these costs, the committee asked Professor Henry M. Levin of Stanford University to prepare a report for the committee's use.

The Costs to the Nation of Inadequate Education analyzes the costs to our Nation of failure to attain high school completion among our male population at the age of 25 to 34. It compares these costs with the costs of providing a high school education for this group. In addition, the report estimates welfare expenditures and the costs of crime, and discusses other economic and social costs attributable to inadequate education.

This study is reproduced here both because it represents the results of new and significant research and because its conclusions will be of interest to all who are concerned with the need to improve education in our Nation.

WALTER F. MONDALE,
Chairman, Select Committee on Equal Educational Opportunity.

THE COSTS TO THE NATION OF INADEQUATE EDUCATION

A Report Prepared For The

SELECT COMMITTEE ON EQUAL EDUCATIONAL OPPORTUNITY
OF THE
UNITED STATES SENATE

by

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JANUARY 1972

SUMMARY OF FINDINGS

An inadequate education for a substantial portion of the population not only handicaps those persons who are undereducated, but also burdens society with reduced national income and government revenues as well as increased costs of crime and welfare. The purpose of this study was to estimate the costs to the Nation of such educational neglect where an inadequate education for the latter third of the 20th century was defined as an attainment of less than high school graduation. Using data from the U.S. Department of Commerce and other sources in conjunction with extensive research literature from the social sciences, this report obtained the following findings:

1. The failure to attain a minimum of high school completion among the population of males 25-34 years of age in 1969 was estimated to cost the Nation:
   - $237 billion in income over the lifetime of these men; and,
   - $71 billion in foregone government revenues of which about $47 billion would have been added to the Federal Treasury and $24 billion to the coffers of State and local governments.

2. In contrast, the probable costs of having provided a minimum of high school completion for this group of men was estimated to be about $40 billion.
   - Thus, the sacrifice in national income from inadequate education among 25-34-year-old males was about $200 billion greater than the investment required to alleviate this condition.
   - Each dollar of social investment for this purpose would have generated about $6 of national income over the lifetime of this group of men.
   - The government revenues generated by this investment would have exceeded government expenditures by over $30 billion.

3. Welfare expenditures attributable to inadequate education are estimated to be about $3 billion *each year* and are probably increasing over time.

4. The costs to the Nation of crime that is related to inadequate education appears to be about $3 billion *a year* and rising.

5. Inadequate education also inflicts burdens on the Nation in the form of reduced political participation and intergenerational mobility, as well as higher incidence of disease. It is difficult to attempt any monetary estimate of these costs.

Chapter I

INTRODUCTION

It would be a severe understatement to say that American society is committed to schooling. In 1970 over 59 million persons were enrolled in the elementary and secondary schools, colleges and universities of the Nation, and approximately 1 million were attending day care and preschool programs. Two out of every seven persons were enrolled in some form of schooling, and over 6 million people were employed in the educational sector to service these students. Given this deeply-rooted societal commitment to a single institution, it is no surprise to find that the institution of schooling has a profound effect on our society.

Of particular importance is the mark that schooling leaves upon an individual in determining his future. For better or worse, formal education is one of the most important determinants of the lifetime opportunities of individuals. In large measure the schools select persons to fulfill the heirarchy of social, political, and economic roles of society. Those who receive more and "better" schooling are in a better position in a schooling-dependent society to obtain the highest earnings, most preferable occupations, and the best jobs.

I.A—Equality of Educational Opportunity

Throughout most of the history of American education the institution of schooling has been considered to be a beneficent and remarkable device for providing equal opportunities among youngsters drawn from very diverse circumstances. Indeed, the discussion and ferment that led to universal public schooling in America during the middle part of the 19th century was largely predicated on the concept that education was the best path to "equal opportunity." In the words of Horace Mann: "Education then, beyond all other devices of human origin, is the great equalizer of the conditions of men—the balance-wheel of the social machinery." [1]

This movement did not represent a quest for a classless society as much as it reflected a search for fairness in the race for life's rewards. Equality of opportunity would not lead to equality of outcomes; for it was recognized tacitly that an industrial society required manual laborers, farmers, clerks, and mechanics as well as lawyers, physicians, managers, and professors. By equality of opportunity was meant ". . . an equal start for all children in the race for life, but their assumption was that some would go farther than others." [2] Differences in ability, effort, luck and preferences would create differences in outcomes among individuals, but the common school would assure

Footnotes for Chapter I on p. 49.

that representative individuals born into any social class would have opportunity to achieve status as persons born into other social classes. That is, the opportunities for achieving life success for a son would not be determined by his father's achievements, but only by his own. Implicit in this policy was the view that the system of public education would create equal opportunity through equal educational opportunity.

It is now clear, in retrospect, that neither equal opportunity nor equal educational opportunity has been achieved. The present system of financing and operation of the educational system leads to greater investments of resources in the rich child than in the poor one.[3] Moreover, the schools tend to be far more effective in providing mobility and status for the middle-class child than the lower-class one. The result is that occupational success, scholastic achievement, and educational attainment of children are still positively correlated with those of their parents.[4]

I.B—Costs to Society of Inadequate Education

The case for equality of educational opportunity, its necessary ingredients, and our failures at achieving it have been heavily discussed and debated in recent years.[5] Yet, what is often ignored in such interchanges is the extent that such educational inequalities represent a burden to the Nation. It is clear that persons who receive insufficient education in a society which rewards individuals according to their educational attainment will suffer in comparison with those who have received better education. Yet, it is not only the individual who is adversely affected, but our society as well; for the direct effects of inadequate education for any person are visited indirectly on the Nation. In this study we wish to answer the question: "What are the costs to society of inadequate education"? That is, what is the magnitude of costs that the Nation must pay for undereducating a significant segment of its population?

There are many ways in which the results of inadequate education require a national sacrifice. For example, if persons are unemployed or underemployed because of their low levels of educational attainment, then social output is reduced below what it would be if these populations had adequate educations for the existing job market. Thus, the Nation foregoes output which might otherwise have been produced and contributed to social welfare.

The reduced earning power of the less educated creates a particularly burdensome condition on the public sector. Low earnings or no earnings translate into little or no tax support for government-supplied goods and services. Further, to support those families whose incomes fall below a reasonable standard, it is necessary to utilize public budgets to pay for food, shelter, medicine, and other services that they would ordinarily be able to obtain out of their own resources. Moreover, low educational attainment may be an important contributor to the problems of crime. The futility faced by such persons in obtaining attractive legitimate alternatives can lead to desperate attempts to achieve status, power, and money through illegal pursuits. To the degree that low educational attainment is a contributor to crime, then a portion of the substantial resources that the Nation allocates to crime prevention and detection, the judicial system, and the penal system represent a social burden.

Finally, there are other significant costs of low educational attainment. In a democratic society the effective functioning of representative government depends upon the active political participation of all citizens. The degree of political involvement of the population seems to be directly related to its educational level. Persons with less formal schooling are not as likely to be registered for the vote; even when they are registered they are less likely to cast a ballot; they are less likely to be informed on political issues; and they are less likely to be active in political organizations. The results is that the democratic concept works less well for the undereducated portion of the population and thus for society as a whole.

And the social costs of poor education are not just limited to the present generation. The offspring of persons with low educational attainment are themselves more likely to suffer the same educational consequences as their parents. Differences in the educational characteristics of their home environments as well as others mean that children whose parents have been handicapped by poor education will themselves complete fewer grades of schooling and will show substantially lower performance in standardized academic achievment. Thus, they in particular and the next generation generally will suffer from the low educational attainment of persons in this generation.

A NATIONAL CONCERN

In a society characterized by high geographic mobility, the educational neglect of one local or State government often contributes to the burden of another. That is, the social costs of poor education are often exported beyond the boundaries of the governments who have been unable or unwilling to provide adequate schooling for their citizens. Thus, the results of undereducation in the rural South often show up as public welfare costs in the northern cities. The felon who lacks the skills for legitimate employment does not limit his criminal activity to the school district or State which failed to develop his proficiencies. Moreover, the tax revenues that do not materialize because of educationally related unemployment or underemployment limit government services at all levels. In most respects it can be shown that the social costs of undereducation do not limit themselves to specific State or local governments or to regions of the country; rather their pervasive qualities have implications for the entire Nation.

Since the entire society appears to bear much of the cost of inadequate education, it is important to estimate the magnitude of these costs. If the social costs attributable to poor education exceed the public investment required to alleviate this condition, then the Nation would be better off if resources were allocated to improve the parts of the educational system responsible for this dereliction. Under such circumstances the level of social welfare would be improved by incurring this investment since in the long run the benefits to the Nation would exceed the costs. Of course the oft-cited doctrine of equality of educational opportunity is in itself an important justification for examining the sources and impact of poor education.

I.C—Defining a Poor Education

Before we can estimate the national costs of inadequate education, it is necessary to define what is meant by this term. The fact that the words miseducation, poor education, or inadequate education are used so commonly tends to mask the fact that there is no consensus on their meaning. Yet if one is to hope to measure the impact of inadequate education, one must define as carefully as possible what it is that he wishes to use as a guideline for deciding what is inadequate and what is adequate.

Perhaps it is best to begin by noting that there are two ways in which one can conceive of inadequate education. The first concept deals with the overall educational approach of a society; is it good or is it bad? The extreme reliance of the United States on formal schooling has been criticized in recent years as a deleterious educational approach. It has been charged as being wasteful, fostering dependence and docility rather than independence, being inegalitarian in the distribution of its rewards, being unable to adapt to social change, as well as repressing systematically imagination and creativity.[6] These criticisms suggest that the American educational system is inferior to some alternative one that might be developed for this society. Yet most of the changes that are suggested—no matter how desirable—are not easily implementable. Such global changes would require a veritable revolution of the entire society before they could be sustained, and they are beyond the scope of this study.[7]

The second concept of inadequate education is a much more modest one. It is based upon the view that for the present there exists a commitment to the existent, schooling-based approach to education, but within our society there are persons who are the recipients of insufficient education, both in the quality and quantity of their schooling experiences. This is a much more traditional approach to defining educational inadequacies, and it is the general approach that will be used in this study. That is, we are taking for granted the basic nature of the American educational system and we are defining the dimensions of inadequate education within that system. Thus our thesis suggests that when some citizens receive considerably poorer education than the norm for the society, not only will those persons suffer, but the larger society will suffer as well.

If inadequate education can be defined in terms of the quality and quantity of schooling received, how do we determine what level of education is substandard? It would seem that a simple criterion is useful. If education does not prepare a person for the normal demands placed upon him, it is inadequate. In this case the characteristics of modern industrial technology require a relatively high degree of literacy with regard to both language and computational skills. To the degree that schooling does not provide these skills, the schooling can be said to be wanting. Moreover, if a person's level of education is vastly inferior to that of the bulk of the population, it is likely that he will be at a considerable disadvantage with regard to other aspects of his daily existence. Since our social institutions are oriented principally toward the average educational level of the population, a person who is severely disadvantaged educationally may find that he is unable to cope satisfactorily with many of the routine demands

placed upon him.[8] The normal level of literacy required to prepare tax returns, apply for insurance benefits, pass written examinations for driver's licenses and work permits as well as to perform other such mundane tasks may exceed his capabilities simply because the tasks themselves have been designed for persons who have benefited from normal educational experiences.[9] In those instances persons who have received relatively less schooling than the population as a whole are likely to find themselves educationally handicapped.

Though it is obvious that any demarcation line between adequate and inadequate education is an arbitrary one, it would seem that in the latter third of the 20th century there is a rather natural place to draw that distinction. Given the relative importance of the high school diploma for job opportunities and for further study, it appears reasonable to define inadequate education as any level of education below high school graduation. Though there are some persons who receive a perfectly adequate education for fulfilling both personal and societal commitments even though they do not complete the secondary level and there are other persons who remain "poorly educated" even though they obtain schooling at the college or university level, it is our view that on the average the failure to graduate from high school is a meaningful measure of the failure to obtain an adequate education in our present society.

I.D—The Incidence of Inadequate Education

What is the incidence of inadequate education among the population? Given the definition that anything less than high school graduation will represent an inadequate educational foundation in the 1970s and beyond, we would like to know the proportion of our citizens who lack this attainment. Table 1 shows the years of school completed by persons 25 years old and over by race and sex in March 1969. The vast majority of the population have completed their schooling by age 25, so this breakdown shows the overall schooling attainment for the adult population 25 or over. According to these data almost half of all males and females lack a high school diploma; and about two-thirds of the Negro population lack this credential.

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TABLE 1.—*Years of school completed by persons 25 years old and over by race and sex, March 1969*

	Percent distribution								Percent with less than 4 years high school
	Elementary			High school		College			
	0 to 4 years	5 to 7 years	8 years	1 to 3 years	4 years	1 to 3 years	4 years	5 years plus	
Total population (thousands):									
All males, 51,031	6.1	9.9	14.0	16.5	29.7	10.3	7.3	6.2	46.5
All females, 56,719	5.1	9.0	13.5	17.9	36.9	9.3	5.8	2.3	45.5
White males, 45,989	4.8	9.1	14.3	16.1	30.6	10.8	7.7	6.6	44.3
White females, 50,833	4.2	8.1	13.7	17.3	38.5	9.8	6.0	2.4	43.3
Negro males, 4,552	18.0	18.3	11.1	20.7	21.4	5.7	3.0	1.8	68.1
Negro females, 5,336	13.4	18.3	11.9	23.9	23.0	5.1	3.2	1.3	67.5

Source: U.S. Department of Commerce, Bureau of the Census, "Educational Attainment: March 1969," "Population Characteristics," Current Population Reports, series P-20-No. 194 (Feb. 19, 1970), table 2. The percent of persons with less than 4 years of high school was derived by adding the appropriate percentages of educational attainment in each row Because of the rounding errors that can occur in this procedure there may exist very slight discrepancies between these numbers and those derived directly from raw data.

Yet to assert that half of the general population and two-thirds of Negro citizens are inadequately educated probably overstates the case severely. Many of the lesser educated persons in this sample are older persons who are in the latter stages of their work careers. When they entered the labor force many years ago the need for a high school diploma was not well-established; there were abundant on-the-job training programs and apprenticeships; and formal education was much less important as a prerequisite to social mobility and to fulfilling one's civic and other needs. Such citizens have been much less handicapped than will persons without high school completion who are presently entering the labor force. Indeed, many of our older citizens in this educational category were not handicapped at all because they began their adult lives at a time when a high school diploma was a mark of relatively high educational attainment.

In contrast, the youngsters who are beginning their work and life careers today without high school completion are in a much less envious position. These persons are embarking on a journey of four or more decades in which the educational handicaps afflicting them at the outset are likely to plague them increasingly throughout their careers as the educational attainment of the general population continues to rise. Of course, the general upward trend toward more schooling has meant that among younger adults the proportion who have not completed high school is much lower than among the population as a whole. Table 2 shows the years of school completed by persons 25–29 years of age by race and sex in March 1969. Only about one-quarter of the population in this age range have failed to complete high school, although two out of five Negro males and almost half of all Negro females do not attain this level. According to these figures the incidence of inadequate education affects about 25 percent of this younger population with the familiar pattern of a heavier burden on Negroes than on whites.

TABLE 2.—*Years of school completed by persons 25 to 29 years old by race and sex, March 1969*

Total population (thousands):	Percent distribution (years)													Percent with less than 4 years high school
	Elementary				High school				College					
	0 to 4	5	6 to 7	8	1	2	3	4	1	2	3	4	5	
All males, 6,341	1.5	0.5	2.4	5.1	4.6	5.6	4.6	39.9	6.6	6.6	3.0	10.4	9.0	24.3
All females, 6,608	1.2	.4	2.3	4.6	5.0	7.3	5.4	48.2	5.2	5.4	2.3	9.7	3.0	26.2
White males, 5,628	1.4	.5	2.2	5.0	4.2	5.4	3.9	39.7	7.0	6.9	3.3	11.0	9.6	22.6
White females, 5,807	1.0	.3	2.1	4.3	4.5	6.4	4.8	49.7	5.5	5.6	2.4	10.3	3.1	23.4
Negro males, 654	2.4	.6	5.1	5.7	7.6	7.8	11.2	41.5	4.1	5.1	.8	5.0	3.1	40.4
Negro females, 728	2.6	1.0	3.7	6.7	8.9	15.0	9.9	38.8	2.6	3.9	1.5	4.5	1.0	47.8

Source: U.S. Department of Commerce, Bureau of the Census, "Educational Attainment: March 1969," Population Characteristics, Current Population Reports, series P–20, No. 194, (Feb. 19, 1970), table 1. The percent of persons with less than 4 years of high school was derived by adding the appropriate percentage of educational attainment in each row. Because of the rounding errors that can occur in this procedure there may exist very slight discrepancies between these numbers and those derived directly from the raw data.

TABLE 3.—*Percent of persons age 25 to 44 who had not completed high school by sex, region, and urbanism of area, March 1969*

	Males	Females
Region:		
Northeast	31.7	28.1
North central	30.7	27.8
South	39.9	41.7
West	23.4	25.8
Metropolitan	28.9	28.8
Central city	32.8	33.8
Outside central city	25.9	24.8
Nonmetropolitan	39.3	37.6
Nonfarm	38.3	37.6
Farm	46.9	38.0

Source: U.S. Department of Commerce, Bureau of the Census, "Educational Attainment: March 1969," Population Characteristics, Current Population Reports, series P-20, No. 194 (Feb. 19, 1970), tables 2 and 3. Figures in this table were derived by adding percentages from appropriate subcategories. Because of the rounding errors that can occur when following this procedure, there may exist very slight discrepancies between these numbers and those derived directly from raw data.

Just as the incidence of high school completion is not uniform across races, neither is it similar among sections of the Nations. Table 3 shows the percent of persons age 25–44 who had not completed high school by sex, region, and urbanism of area in March 1969. Among the four major regions, the West showed the lowest concentration of persons who had not attained high school graduation, and the South reflected the highest incidence of this characteristic. Regional differences appear to be substantial.

Moreover, the proportion of persons who failed to complete high school differed substantially between metropolitan and nonmetropolitan regions with the latter showing a much higher incidence of inadequate education as we have defined it. Within metropolitan areas the central cities are characterized by a lower concentration of persons who have obtained high school diplomas than the suburbs; and within nonmetropolitan areas the farm portions show lower educational attainment than the nonfarm sections.

The implications of these findings are that a deliberate public policy to promote high school completion—if successful—would have its greatest impact on the South followed by the Northeast and North Central States. The educational upgrading would be greater for nonmetropolitan areas than metropolitan ones; for central cities than for suburbs; and for farm areas than for nonfarm ones outside of metropolitan areas.

I.E—Assessing the Social Costs of Inadequate Education

The costs of inadequate education can be divided into those which are borne privately and those which represent a burden to society.[10] In general, when individuals who have received inadequate education are disadvantaged directly by this insufficiency, we view the burden as a private one. Whenever their neighbors or members of a larger constituency are affected negatively by their low educational attainment, we refer to these as social costs. Often the incidences of both private and social costs overlap to such a great extent that the

categorization of costs into separate components is necessarily arbitrary. For example, to the degree that a person is deprived of employment and earnings because of inadequate education, he is bearing the costs of his undereducation. Yet, if he requires welfare payments to survive and if the society foregoes tax payments that might have otherwise been received, there are associated social costs as well.

Of course the case for improving the educational attainments of those who are most handicapped by the present system can be made on the basis of fairness alone. If all people are to have relatively equal access to life's rewards, then the race for success should begin on the same starting line for all competitors. It would seem that this is what is implied by equality of educational opportunity. As in any competition, the race will still be won by the swiftest, but at least everyone will start at the same place. Persons who lack high school completion begin the quest for employment, earnings, occupations, and so on with severe disadvantages relative to those who have received high school diplomas and further schooling. These inequalities in educational attainment tend to exacerbate the inequalities in the distribution of opportunity in our society. Reduction of these disparities might be considered a worthy goal in itself.

In this study we are concerned primarily with estimating the social costs of inadequate education. More specifically what does it cost the Nation to "underinvest" in the education of a substantial segment of its population? In particular we will attempt to estimate the following social costs as they are imposed by present educational policies:

1. Foregone national income;
2. Foregone tax revenues for the support of government services;
3. Increase in the costs of income maintenance and welfare programs;
4. Increase in costs of crime;
5. Reduction in political participation;
6. Reduction of intergenerational mobility; and,
7. Poorer levels of health.

We will be handicapped in this endeavor by our considerably less than perfect knowledge of the linkages between educational attainments and social consequences. That is, it is difficult to trace precisely the effects of inadequate education on each of the social phenomena that we wish to review. While each can be related theoretically and some data are available for obtaining numerical estimates of their impacts, the computational results must be considered to be tentative. Indeed, they should be scrutinized for their overall magnitude rather than for their precise values. Yet the importance of these estimates as potential inputs into public policy means that even approximate values can be very useful.

Essentially the approach that we will use to measure the costs of inadequate education is to follow a procedure that we will call "reasoned estimation." This process represents an attempt to show the reader the step-by-step construction of the estimates with emphasis on the logic of the procedures and the evidence supporting the various underlying assumptions. First, an analysis of the conceptual

relationships between inadequate education and the phenomenon we are concerned with will be presented. Second, these will be translated into a set of empirical procedures for estimating related social costs. Third, the best available set of data will be applied to this framework; and last, the resulting estimates will be interpreted. For those readers who might question us at any of these stages it should be a relatively easy task to impose different assumptions or data on our analysis in order to see if one comes out with substantially different results.

Chapter II

INVESTMENT IN HIGH SCHOOL COMPLETION

Since we defined an educational attainment of less than high school completion as inadequate for our highly technical society, it is useful to explore the social implications of failing to invest in that level of education for a substantial segment of the population. It is not possible to do this for the entire society because the data are not available and our underlying knowledge of these complex relationships is sparse. Yet is is possible to trace the sacrifice in national income reflected in the undereducation of a specific and well-defined subpopulation. In this chapter we will estimate the loss in national income and tax revenues attributable to insufficient education among a group of young men who have recently entered the labor force, and we will compare it with the public expenditure required to provide this group of men with an adequate education.

II.A—Adequate Education as a Social Investment

More specifically, we will review the incidence of failure to complete 12 years of schooling among a cohort of young males who are old enough to have completed their education. Second, we will compare this to a hypothetical distribution of educational attainment for these adults if public policy required a minimum of high school completion for all citizens. Third, we will compare the estimated contribution to national income for this population under the existing distribution of education and under the assumption that all had completed a minimum of 12 years of schooling. The difference between these two contributions represents one aspect of the social costs of inadequate education, foregone national income. Fourth, we will estimate the loss in tax revenues to the Federal, State, and local governments that results from this foregone income; and last, we will compare these social costs of educational neglect with the cost of providing adequate education to this cohort of young people.

EDUCATIONAL ATTAINMENT AMONG MALES, 25–34 YEARS OLD

Table 4 shows the distribution of educational attainment among males, 25–34 years old in March 1969. This cohort of young men was selected for the analysis because they represent a group with recent educational experience who have generally completed their schooling and are beginning their work careers. Moreover, there exist abundant census data for this group which enable us to link their income with their education and other characteristics. In 1969 there

Footnotes for Chapter II on p. 49.

were some 11.8 million men in this age category of whom about 12 percent were nonwhite. It should be borne in mind that the nonwhite group is predominantly Negro (over 90 percent), but that it does include members of other races as well. Following the familiar pattern established in earlier descriptions of educational attainment, about 44 percent of the nonwhites have not completed high school in contrast with only 25 percent of the whites who fall into this grouping.

TABLE 4.—*Educational attainment for males 25 to 34 years of age, March 1969, by race*

[Numbers in thousands]

	Elementary		High school		College					
	Less than 8 years	8 years	1 to 3 years	4 years	1 year	2 years	3 years	4 years	5 or more years	Total
White males	537	561	1,499	4,161	630	686	286	1,191	960	10,467
Percentage	5.1	5.3	14.3	39.8	6.0	6.5	2.7	11.3	9.2	100
Nonwhite males	145	85	353	491	48	58	10	71	61	1,319
Percentage	10.9	6.4	26.7	37.2	3.6	4.4	0.8	5.3	4.6	100

Source: U.S. Department of Commerce, Bureau of the Census, "Educational Attainment: Mar. 1969," Population Characteristics, Current Population Reports, series P-20, No. 194 (Feb. 19, 1970), table 1.

Table 4 represents the actual distribution of educational attainment for males 25–34 years of age in 1969. Since we wish to calculate some of the national costs of failing to provide sufficient education, we wish to compare the actual distribution of educational attainment with one that might exist if public policy provided a minimum of high school completion for all persons.

TABLE 5.—*Hypothetical distribution of educational attainment for males 25 to 34 years of age, March 1969, by race under minimum requirement of high school completion* *

[Number in thousands]

	High school	College		
		1 to 3 years	4 years	5 or more years
White males	5, 919	2, 020	1, 414	1, 155
Percentages	56. 5	19. 3	13. 5	11. 0
Nonwhite males	886	210	121	105
Percentage	67. 2	15. 9	9. 2	8. 0

* Based upon assumption that all complete high school and that continuation beyond high school will follow pattern for nonwhite males 25 to 29 in March 1969. Data on nonwhite rates are taken from U.S. Department of Commerce, "Educational Attainment: March 1969," Population Characteristics, Current Population Reports, series P-20, No. 194 (Feb. 19, 1970), table 1.

Table 5 shows the hypothetical distribution of educational attainment for males 25–34 years of age, March 1969, by race, under minimum requirements of high school completion. Since the high school diploma also makes an individual eligible for further schooling at the college level, it is reasonable to believe that some of the additional persons who graduate from high school will continue their education. In Table 5 we have assumed that the rates of continuation beyond high school for all additional graduates will be similar to the present ones for nonwhites. Since only about 19 percent of the nonwhites compared to 36 percent of the whites had completed one or more years of college, the use of the nonwhite continuation rates represents a very conservative assumption of college participation for a group of high school graduates that is predominantly white.

We have hypothesized that by undereducating a vast segment of the population, the Nation endures a loss of potential output that would be realized had the Nation provided adequate education for all of its citizens. Since Table 4 represents the present distribution of educational attainment and Table 5 depicts the "minimum desired" distribution of educational attainment for the male population 25–34 years of age, we wish to estimate the sacrifice in national income created by the present educational neglect. That is, we wish to determine what the additional output and earnings of this segment of the population would be if society had provided the levels of education reflected in Table 5.

TABLE 6.—*Estimated numbers of additional males 25 to 34 years of age completing education at each level under public policy of high school completion*

	High school completion	College		
		1 to 3 years	4 years	5 or more years
White males	1, 758, 000	418, 000	223, 000	195, 000
Nonwhite males	395, 000	94, 000	50, 000	44, 000

Table 6 reflects the number of additional males 25–34 years of age who might have completed their schooling at each of the educational levels had government policy provided a minimum of high school graduation. It is estimated that almost 1.8 million additional white males and 400,000 more nonwhite males would have obtained high school diplomas before entering the labor force had such an educational policy existed. Moreover, under relatively modest assumptions of continuation beyond the secondary level, it is estimated that some 800,000 white males and 200,000 nonwhite ones would have obtained training at the college level.

Before calculating the loss in national income reflected in the substantial numbers of young males who fail to complete high school, there are a number of conceptual and empirical issues that need to be addressed. First, how do higher levels of education lead to higher levels of productivity and income? Second, are present relative differences in earnings by level of education—for example, between high school graduates and drop outs—appropriate for caluclating the income foregone by not investing in a minimum of high school completion for everyone? And, third, how should additional income that might have been produced in the future by a different educational policy be weighted relative to additional income produced at present. Each of these represents a rather complex set of phenomena for which we need tentative answers in order to proceed with our calculations.

The next three sections address themselves to each of these questions: In II.B the relationships between schooling, productivity, and income are explored. The criteria for calculating relative differences in income and earnings by level of education are established in II.C; and the problem of evaluating future increases in income is assessed in II.D. The resolution of these issues paves the way for the ensuing estimate of the national income and government revenue lost because of inadequate education among young males.

II.B—SCHOOLING, PRODUCTIVITY, AND INCOME

If we compare persons with less than high school completion with those who have obtained their high school diplomas and perhaps have even attended college, we note that the former are likely to be found in the lower paying occupations, to be receiving lower earnings even within an occupation, and to be more susceptible to unemployment and underemployment than the latter.[1] These differences in experiences reflect themselves in differences in economic productivity and earnings.[2] Yet, one must ask why persons with higher levels of education are more productive than ones with less schooling.

There are at least three reasons that workers with more education are likely to be more productive and derive higher earnings than those with lower educational attainments. The first is that additional schooling provides one with a greater set of skills, both specific and general, which improve productivity.[3] These skills include improved numerical and language proficiencies, as well as conceptual skills that enhance the ability to make decisions in planning, organization, and production. They may also include particular vocational skills that are imparted in the educational process.

Second, additional schooling tends to inculcate persons with specific attitudes and behaviors that help them to function in the large bureaucratic enterprises that characterize much of both the government and the private sector.[4] Relationships of the individual to the organizational hierarchy and to the reward structure are two such areas whose acceptance by workers improves the efficiency of the organization as a whole. Since schools tend to be organized much like other organizational units with high degrees of internal specialization and similar intrastructures, it is believed that schools tend to socialize workers to accept the complex work relationships that they will face in their occupational roles.[5] Students who complete fewer grades are less molded into this organizational labyrinth and are thus less able to qualify for positions which require such intraorganizational skills.

Third, it has been suggested that in a society characterized by rapid technological change, education makes a contribution to productivity by creating a greater ability to adapt to such change. In particular, the higher the level of managerial functions required, the greater will be the requirement to adapt to technological change.[6] Thus, the assumption is made that the more educated a manager or professional, the quicker he will introduce new techniques of production; indeed, studies of agriculture have found that the more highly educated farmers tend to adopt productive innovations earlier than those with lesser education.[7] To the degree that there is a general relationship between the level of education and the ability to adapt to changing conditions of production, the person with more schooling will benefit more in a period of technological progress.

Finally, as an adjunct of this, it is possible that the technology of production in a society reflects the educational mode of the labor force. That is, as average skill levels rise, the nature of capital that is introduced into the production process capitalizes on the greater abundance of such labor force capabilities. The result is that low skill opportunities decline as the educational attainment of the work force rises. Technology that requires higher skill levels replaces technology that utilizes lower skill levels as the persons with higher skills become more plentiful. Unfortunately this means that the portion of the population with considerably less than average attainment finds that the relative demand for its services is declining.[8]

Today the proverbial low status occupation of ditchdigging requires more than a strong back and a shovel. These attributes have been replaced by expensive and sophisticated trenching equipment which requires higher skill levels to operate and maintain. Industrial maintenance is no longer identified with the broom and the dustrag as much as it is with vacuum sweepers and other equipment which requires judgmental skills that are not inherent in the broom technology. Even when these innovations are introduced to save man-

power, they are likely to use a more highly skilled labor force in place of the larger number of lower skilled workers whom they replace. With the introduction of new technology, labor productivity may rise among workers with higher skills; but such changes may be at the expense of less educated workers.

Finally, it is important to note that while there are several reasons posited for schooling-related productivity of persons, it is difficult to pinpoint the combination that is most relevant for explaining increases in productivity in specific instances. Attempts that have been made to specify the exact skills required for particular job functions have met with little success because such requirements are probably very diverse, multidimensional, not easily subject to measurement, and not always obvious to the researcher.[9] In addition, the productivity of the organization may be related to schooling produced attributes that are not reflected in individual skill and productivity measures. Thus, our conceptual knowledge linking productivity and schooling is not easily verified quantitatively and studies that have attempted to explore the link have been anecdotal or fragmentary at best.[10]

II.C—Calculating Relative Differences in Income by Level of Education

The U.S. Census reports income by educational attainment, age, sex, race, region, and other characteristics. Since we can calculate income by level of education, it would appear to be a simple task to relate additional years of schooling to additional national income. Accordingly, we could obtain estimates of the national income sacrificed by not investing in a minimum of high school completion for all citizens.

Yet, there are certain questions raised by such a naive approach. First, how do we know that the present relative differences in earnings by level of education are appropriate for calculating income foregone under a policy of high school completion for everyone? Second, what adjustments should be made for the possibility that present financial returns to high school graduates and college attendees may reflect not only schooling differences but also "ability" differences as compared with the returns to high school dropouts? And, third, how should we treat racial differences in income?

INCOME AND EARNINGS

Before proceeding, it is important to emphasize that earnings and income are not synonymous. While income reflects the economic returns to both physical capital inputs (land, buildings, equipment) and human capital ones (labor), earnings include only the latter component. In general we expect additional schooling to have its greatest impact on the returns to labor and thus earnings. It is likely though, that the effect of more education on the individual's ability to access and process information may enable him to make more productive investments in physical capital which augment the non-earnings components of his income as well. The available census data refer specifically to income rather than to the earnings subcategory, but it does not appear that the use of income data will impart a serious bias to our calculations.[11]

STABILITY OF INCOME DIFFERENCE

Although the census reports the income level associated with each level of schooling, how do we know that these relative income differences are stable over time? More specifically, let us consider the income differentials between persons who have attained various levels of schooling below high school completion and those with high school diplomas. Can we use these differentials to assess the national income foregone as a result of not investing in a minimum of high school completion? Economic theory would suggest that as we increase the supply of high school graduates *vis a vis* ones with less than high school, the relative incomes of the former will decline. If this is true, then by applying the present observed differences in incomes between the two levels of schooling we would be overstating the returns to the higher level.

In this case, however, the evidence suggests exactly the opposite trend. That is, as the supply of high school graduates has increased, the incomes of high school graduates relative to elementary graduates or high school dropouts has also increased.[12] Welch has suggested three possible reasons for this paradox:[13]

1. It is possible that the most rapidly expanding industries tend to be those which utilize higher skill levels thus increasing the demand for persons with more education at a faster rate than that for persons with more modest schooling;
2. Technological progress may improve the productivity of the more educated worker at a higher rate than the less educated one; and,
3. The quality of schooling itself may be improving over time.

The point is that concomitant with the increased supply of high school graduates and persons with college training is an increase in quality or such a large increase in the demand for more highly educated persons that their incomes have risen relative to persons with less schooling. In 1949 male high school graduates were receiving about 134 percent of the income of male elementary school graduates. By 1966 the differential had risen to 156 percent despite massive increases in numbers of persons with high school diplomas.[14]

This evidence suggests that it is unlikely over the long run that the present relative income differences between high school graduates and those with less than high school will decline as the number of such graduates rises. Accordingly, the use of the present differentials appears to be justified and may even tend to understate the value of higher educational attainments.

"ABILITY" ADJUSTMENTS

It is reasonable to believe that a portion of the difference between incomes of persons with varying amounts of schooling is attributable to factors other than schooling *per se*. In particular, individuals with higher educational attainments may possess greater intellectual skills, motivation, and other attributes that enable them to go farther in school and that also increase their productivity in the marketplace.[15] Unless we adjust the income differentials associated with more schooling for such "ability" factors, we will tend to overstate the sacrifice

in national income reflected in the failure to bring significant portions of the population-up to high school completion or beyond.

While several studies attempt to pursue the ability-education-income relationship, their findings are far from uniform. Indeed, some studies find no effect of ability on income while others find that the effect of ability on income is enough to reduce the apparent relation between schooling and income by one-third.[16] Actually, the differences in findings are not surprising given the large variations in sample populations and measures of ability. Some studies have carried out these analyses on low achievers alone, those who failed the Armed Forces Qualification Test,[17] while other studies have used more representative samples of army veterans or general populations.[18] Ability measures in these studies have varied from the use of test scores alone to composites of social class, race, age, marital stutus and other nonschooling influences on income.

Based upon these studies, it is not possible to know the exact proportion of income differences among persons at the various education levels that is attributable to differences in ability. Yet it is possible to make a reasonable assessment of the "ability" effect. In this study we will deflate income differences associated with schooling by 25 percent in order to account for the higher abilities of persons who have attained more schooling. That is, we will presume that three-fourths of income differences between persons who have completed different levels of schooling is directly related to education and one-fourth is related to the higher "abilities" of persons who have completed more schooling.

It appears that this adjustment will tend to yield relatively conservative estimates of schooling effects on income for two reasons. First, a 25 percent correction for ability is within the proper range of ability effects implied by studies that have examined the ability-education-income nexus; and second, ability seems to be a more prominent factor in explaining income differences at relatively high levels of educational attainment than at lower ones (e.g. college level).[19] In this respect our estimates of foregone national income due to undereducation of a particular segment of the population are derived primarily from comparing income differences for persons at the lower end of the educational spectrum where "ability effects" are likely to be less prominent.

RACIAL DIFFERENCES IN INCOME

The recent census data that are available on lifetime income by educational attainment are reported for males without regard to their racial backgrounds.[20] Yet, nonwhites show much lower incomes at each level of education than do whites. Table 7 shows the median income for Negro and white men 25–54 years old in 1969 by highest grade completed. At each educational level the income level of Negro males is only about two-thirds to three-quarters the income of white males. To a large extent these differences appear to be attributable to discrimination practices in labor markets that prevent Negroes and other nonwhites from obtaining more productive employment positions within industries and firms.[21]

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TABLE 7.—*Median income for Negro and white men 25 to 54 years old in 1969 by highest grade completed*

Years of school completed	Median income		Negro income as percent of white
	Negro	White	
Elementary:			
Less than 8 years	$3,922	$5,509	71
8 years	4,472	7,018	64
High school:			
1 to 3 years	5,327	7,812	68
4 years	6,192	8,829	70
College:			
1 to 3 years	7,427	9,831	76
4 years or more	8,669	12,354	70

Source: U.S. Department of Commerce, Bureau of the Census, "The Social and Economic Status of Negroes in the United States, 1970," Special Studies, Current Population Reports, series P-23, No. 38, p. 34.

If nonwhites represented the same proportion of the population at each educational level, the lack of separate lifetime income estimates by race would not represent a severe problem. Yet, nonwhites appear to account for 18.3 percent of males 25–34 years of age who failed to graduate from high school; 10.6 percent of high school graduates in this age bracket; and 7 percent or less of those who have attended 1 year of college or more. This pattern suggests that a portion of the higher incomes for males in the general population that is associated with additional schooling is certainly attributable to the fact that there are smaller concentrations of nonwhites—who are discriminated against—at the higher educational levels. Yet, as we raise the educational attainments of nonwhites it is reasonable to believe that discrimination at the higher level will continue.

Accordingly, educational gains for nonwhites should be weighted by associated income gains for nonwhites; and educational advances for whites in the sample should be adjusted for associated income increases for whites. This is the procedure that we have used to calculate estimates of national income lost by not investing in a minimum of high school completion. Such an approach assumes that the present relative discrimination against nonwhites will continue over the lifetime of the present group of young males. This assumption may be unduly pessimistic given the recent modest gains toward racial equality.[22] Yet such an assumption will tend to lead to an understatement in our estimate of income lost because of inadequate education rather than to overstate it; and it is the overstatement that we wish to avoid.

II.D—Evaluating Future Incomes

A final issue that must be resolved before calculating what it costs the society for inadequate education of this group of males is that pertaining to the relative values of future versus present income. Ordinarily the investment decision is based upon devaluing income obtained in the future in comparison with that obtained in the present. The underlying assumption is that a given amount of income received today yields more satisfaction to society than the same amount deferred until the future. The usual way of handling this phenomenon is

to discount future income streams by some interest rate to reflect that income received in the future has less value than the same amount of income when it is derived in the present. This adjustment enables us to compare the income benefits of this possible investment with others that may show different time patterns over which the benefits are received. That is, investments with vastly different time horizons can be standardized to their "present values".

The particular rate of discount selected for assessing future benefits depends upon the nature of the investment as well as a complex set of other rather subjective factors; and the selection of criteria for choosing the "optimal" rate is fraught with controversy.[23] There are two aspects of government investment in high school completion which should be considered in choosing a discount rate: The specific implications of improving educational attainment among those with the greatest educational handicaps and the fact that our lifetime income estimates are based upon present income levels that are unadjusted for future increases in productivity.

An investment in raising the educational proficiencies of the most educationally neglected segment of the population is not only one which increases national income; it also reduces the disparity in educational attainment and opportunity within the society thus giving those who would otherwise have insufficient education a fairer chance. Moreover, this improvement in opportunity is also transmitted to future offspring thus obviating much of the need for similar types of investments in subsequent generations since the most important single determinant of a child's educational attainment appears to be the schooling of his parent.[24] Since this type of investment produces a better distribution of opportunity in the future as well as increases in national income it seems reasonable to minimize the penalty attached to future income benefits particularly if no short-run alternative to improving opportunity exists. That is, the nature of this investment suggests a relatively low discount rate.[25]

Second, the estimates of lifetime income by level of educational attainment that we will use for this study are based upon present incomes that do not account for future increases in productivity. Based upon the experience of the 1960s, a 3-percent increase in labor-productivity can be expected over the long run. The lack of accounting for such a factor in our lifetime estimates means that our data are already discounted or penalized to this extent. That is, by *not* adjusting future income upward for increases in labor productivity, we have tacitly assumed a discount rate of about 3 percent.

Accordingly, we will not apply an explicit discount rate to adjusting future income streams, since such an adjustment is implied by our lack of correction for productivity increases. The outcome is an implicit discount rate which is also relatively low, satisfying the first criterion for an investment which affects both income and the distribution of opportunity.

II.E—Estimates of Income Foregone

In summary we will use the following procedures to calculate the income that the Nation has lost by having failed to provide a minimum of high school completion for all men in the 25–34-year-old group.

First, we will present census data on lifetime incomes by educational level for both white and nonwhite males. Second, we will apply these to the additional educational attainments of the 25–34-year-old male group had all of these men completed a minimum of high school. These income figures will be adjusted for the racial composition of the men whose educational qualifications would have been upgraded. In this manner we will obtain a gross estimate of the income foregone by having failed to provide an adequate level of education for all members of the group under scrutiny. Finally we will deflate this gross figure by 25 percent in order to account for nonschooling differences or "ability" factors reflected in the existing income-education relationship in order to obtain a net estimate of income lost by the Nation over the lifetimes of this cohort of young men.

TABLE 8.—*Estimated lifetime incomes from age 18 for males by race and educational attainment*

Level of schooling completed	Lifetime income		
	All males *	White	Nonwhite
Elementary:			
Less than 8 years	$206, 000	$219, 500	$155, 900
8 years	263, 000	276, 100	176, 700
High school:			
1 to 3 years	282, 000	300, 400	204, 200
4 years	336, 000	347, 000	242, 900
College:			
1 to 3 years	378, 000	384, 600	292, 300
4 years	489, 000	497, 500	348, 200
5+ years	544, 000	554, 000	387, 800

Source: See appendix B, p. 59.
* Rounded to nearest thousand.

LIFETIME INCOMES FOR MEN

Table 8 reflects the estimated lifetime incomes for men by level of schooling completed, based upon 1969 data.[26] In order to estimate income gains separately for whites and nonwhites according to education level, we have weighted the aggregate figures provided by the census according to the relative income weights reflected in Table 7. Thus, the lifetime incomes of nonwhite males are assessed at about 70 percent of those of their white counterparts. According to the estimates in Table 8, the difference in expected lifetime incomes between men with 8 years of schooling and those with high school completion is about $73,000 for the overall population; and differences in lifetime income between high school dropouts and graduates are in the $40,000-$50,000 range. Differentials at the college level are substantially larger with college graduates expected to receive about $150,000 more than high school graduates.

TABLE 9.—*Estimates of number of males 25 to 34 years of age who would have increased their educational attainments under a national policy providing a minimum of high school completion*

[In thousands]

	Number of additional persons completing level		
	White	Nonwhite	Total
From—			
Less than 8 years	537	145	682
8 years	561	85	646
1 to 3 years high school	1,499	353	1,852
To high school completion.			
From high school completion:			
To—			
1 to 3 years college	418	94	512
4 years college	223	50	273
5 or more years college	195	44	239

INCREASED EDUCATIONAL ATTAINMENTS UNDER POLICY OF HIGH SCHOOL COMPLETION

Table 9 shows the estimated additional educational attainments for men 25–34 years of age that might have been derived under a national policy providing a minimum of high school completion. This table was compiled by comparing the actual educational distribution for these men in Table 4 with the hypothetical one reflected by the social investment policy that would provide a high school diploma in Table 5. It will be recalled Table 5 was constructed on the assumption that a portion of the additional men who would have completed high school under such a policy would have been expected to have obtained at least some college training.[27] Since Table 8 reflects the additional lifetime income generated by greater schooling attainments and Table 9 represents the additional educational attainments, it is a relatively easy task to estimate the total income lost by *not* having invested in a minimum of high school completion for this group of men.

TABLE 10.—*Estimate of incomes forgone by failure to invest in a minimum of high school completion for all males 25 to 34 years old* *

	Gross income forgone (billions)	After 25 percent ability adjustment
White:		
High school completion	$178	$133.5
College	90	67.5
Total whites	268	201.0
Nonwhite		
High school completion	32	24.0
College	16	12.0
Total nonwhites	48	36.0
Total all males 25–34 years old	316	237.0

Details for computations are in appendix B, p. 59.

NATIONAL INCOME SACRIFICE

Table 10 presents the estimates of income foregone by our society because of its failure to invest in a minimum of high school completion for all males 25–34 years of age. The gross income loss calculated in this table is about $316 billion over the lifetime of this group of men, but this amount is unadjusted for "ability" factors. After reducing this amount by 25 percent to account for the lower "abilities" of persons who have not completed a minimum of 4 years of high school, the net amount of national income lost is estimated to be a very sizeable $237 billion over the lifetime of this group. This amount is composed of about $157.5 billion that emanates directly from the additional high school completions and another $79.5 billion for the men who would have continued their education beyond this level had they received high school diplomas. That is, the failure to have invested in adequate education among men 25–34 years is likely to cost society about $237 billion in lost income over the lifetime of these men.

II.F—Loss in Tax Revenues

Any substantial loss of national income is also tantamount to a large loss of tax revenues at all levels of government. In 1969 government tax receipts represented about 31 percent of personal income, rising from 23.5 percent in 1949. About two-thirds of these public revenues went to the Federal Government and about one-third was collected by State and local governments. (See Appendix C * for details.) Thus, almost a third of the reduction in national income will represent a dimunition in revenues for the support of public goods and services.

On the basis that about 30 percent of the national income lost by not investing in adequate education will represent a reduction in tax collections, the sacrifice for the public sector from having failed to make this investment for the 25–34 year old group of males is about $71 billion. That is, approximately $71 billion in additional tax revenues might have been realized over the lifetime of the group of men surveyed in this analysis had a minimum educational attainment of high school completion been provided. Of that amount, about $24 billion would have represented the additional contribution to State and local governments, and about $47 billion would have been added to the Federal Treasury. Given the fact that an increasing proportion of national income is being channeled to the government sector over time, the $71 billion estimate is likely to be a conservative one.

*See p. 60.

II.G—The Cost of Providing Adequate Education

We have estimated two types of social costs of *failing* to provide adequate education for a large group of young males:

1. Foregone national income; and,
2. Lost government revenues.

It is useful to compare these costs with the cost of providing adequate education for this cohort. That is, what would it have cost society to have provided a minimum of high school completion for all of these citizens as well as the additional education that would have been undertaken beyond high school by the additional high school graduates? More specifically, what would have been the additional investment required to provide these increased educational attainments reflected in Table 9? Given this information it is possible to ascertain whether the costs to the Nation of inadequate education are likely to exceed the investment required to have remedied the situation.

There are two basic methods for assessing the investment costs of raising educational attainments and each has different implications for estimating the magnitude of such costs. The first approach is to assume that additional costs for alleviating undereducation can be ascertained by computing the prevailing level of expenditure for each year of schooling and multiplying it by the additional years of schooling that would be generated. That is, if educational policy provided that a man would complete 3 more years of schooling at a cost of $1,000 per year, this method would calculate the total cost of additional education at only $3,000 for that man. Such a technique assumes that by changing their focus, schools can upgrade the amount of education that students will obtain while spending at the existing rate for each additional student year and it probably represents a lower limit for estimating the cost of providing higher educational attainments for the educationally handicapped.

The alternative method of estimating investment costs is to assume that massive increases in expenditures on potential dropouts would be required in order to fulfill the minimum goal of high school completion. This approach would necessitate the determination of higher expenditure levels and applying them to the schooling of students who would otherwise end up with insufficient education. By making a generous estimate of such remedial or compensatory expenditures it is possible to derive an upper limit for the public investment required to provide an adequate education for all citizens. We will use both methods in order to calculate both the low and high values for such investment costs, and we will select the midpoint of the range as representing the most reasonable figure.

TABLE 11.—*Estimates of investment costs for providing a minimum of high school completion and nonwhite continuation rates beyond high school for all males in 25 to 34 year age group*

	Number of additional persons completing level (in thousands)	Number of years additional schooling per person	Cost per year	Total cost per level (in billions)
From elementary to high school completion:				
Less than 8 years	682	7	$1,214	$5.796
8 years	646	4	1,214	3.137
1 to 3 years high school	1,852	2	1,214	4.497
Total				13.430
From high school completion to—				
1 to 3 years college	512	2	2,545	2.606
4 years college	273	4	2,545	2.779
5 or more years college	239	6	2,545	3.650
Total costs, college				9.035
Total investment costs for high school completion and college attendance				22.475

LOWER LIMIT OF INVESTMENT COSTS

Table 11 estimates the lower limit on investment for obtaining a minimum of high school completion for all males in the 25–34-year-old age group as well as college participation for some of the additional high school graduates based upon the nonwhite continuation rates. (See Appendix D* for details.) It was estimated that $1,214 per year represented the additional cost for the secondary grades and $2,545 was the additional annual cost for each year of college attendance. These figures will tend to overstate existing costs for reasons noted elsewhere.[28] Assuming that all of these added expenses are borne by government, but that they apply only to the additional years completed, the cost of providing a minimum of high school completion for all males who would otherwise not graduate is estimated at about $13.4 billion; and the cost of providing additional education to those persons among this group who would continue their education beyond high school is about $9 billion. Thus, the lower limit on public investment for eliminating inadequate education among this group of males is estimated to be about $22.5 billion.

UPPER LIMIT OF INVESTMENT COSTS

In order to calculate an upper limit to the costs of providing adequate education for the group of men in our analysis, we assume that massive increases in spending on potential dropouts must take place in both the elementary and secondary grades.[29] That is, in part the incidence of undereducation is attributable to inadequate spending during the period that youngsters are enrolled in school. Indeed, most

*See p. 60.

youngsters who do not complete high school are found among the poorer States and poorer school districts of the Nation, and much less is presently spent on their education than on that of other children.[30]

In order to derive an upper limit to investment costs, we will assume that we will have to provide *additional expenditures* for each potential dropout over his entire elementary and secondary career that would equal the average of what is already being spent. According to our estimates of per pupil costs this policy would provide increased expenditures of $728 for each of the elementary grades and $1,214 for each of the secondary grades for each of the men in the 25–34-year-old age bracket who did not complete high school. Summed over the elementary and secondary schooling period we would add about $10,700 to what was presently being spent for each of the almost 3.2 million men who would otherwise have failed to complete high school as reflected in the data for the 25–34-year-old group. Assuming that these men had already been receiving expenditures at the national average, the additional investment would raise spending to about $1,450 a year for each eligible person at the elementary grades and over $2,400 a year at the secondary level. This amount would surpass by several factors the present efforts at providing compensatory expenditures for children from disadvantaged backgrounds.[31] Such a substantial infusion would represent an investment cost of about $34 billion more than the lower limit of $23 billion. Thus, we can view a figure of $57 billion as the approximate upper limit on spending required to alleviate undereducation among the 25–34-year-old group of males.

SUMMARY OF INVESTMENT COSTS

In summary, the lower limit on investment required to remedy inadequate education among the 25–34-year-old male group is estimated to be about $23 billion, and the upper limit is assessed at about $57 billion. Selecting the midpoint of this range as the most reasonable estimate of costs, the investment figure required to alleviate the social costs of poor education among this group of men is approximately $40 billion. Clearly, the more effectively that the Nation can focus its schools on the needs of potential dropouts (within their existing resources), the lower the additional investment required to attain a minimum of high school completion. In this respect it seems that schools have not yet made the serious efforts that are necessary to construct programs and utilize resources that build upon the unique experiences of minority youngsters and those drawn from lower-income origins.[32]

II.H—High School Completion as a National Investment

According to our estimates it is clear that a national investment in high school completion has a large payoff to society. Put in another way the costs of educational neglect would far exceed the social investment required to alleviate this problem. Among 25–34-year-old males alone it appears that the expected increase in lifetime income would have been about $237 billion had all members of the group completed a minimum of high school. In contrast, the national investment required to fulfill such an objective would appear to have cost

only about $40 billion. Thus the social costs of inadequate education seem to be some $200 billion in excess of the social costs of policy of high school completion for the group of men under scrutiny. Each dollar of social investment in this direction would generate an additional $6 of national income over the lifetime of the 25–34-year-old men.

Not only does such a policy imply no additional tax burdens for the Nation; to the contrary it appears that the provision of a minimum of high school completion would generate a surplus of government revenues over costs. The additional $237 billion in lifetime income that is presently foregone by insufficient education would have provided about $71 billion in additional revenues to Federal, State, and local governments. Government treasuries would have received an excess of more than $30 billion over the costs of the program.

Because of lower labor force participation rates for women as well as discrimination against them in the job market, it is clear that a program that would provide a minimum of high school completion for all citizens would show somewhat lower relative payoffs than for men alone. Yet, even if the foregone income for women were only about a third of their male counterparts for the same relative investment cost, the total program would still show a large surplus of lifetime income over expenditures and the government revenues would still appear to exceed the government costs. Moreover, the fact that an educational policy providing a minimum of high school completion would also be likely to reduce the costs of welfare and crime while increasing political participation, intergenerational mobility, and health benefits reinforces strongly the high payoff reflected in increased income and government revenues.

Chapter III

INADEQUATE EDUCATION AND WELFARE EXPENDITURES

In the 1970 fiscal year so-called welfare programs cost the Nation about $12.8 billion, and unemployment compensation added another $4.3 billion. This chapter attempts to estimate the amount of welfare expenditures that is attributable to the provision of inadequate education. Families and individuals whose incomes fall below a minimal level or who fall into other specified categories of need are eligible for financial support payments from the government. While the set of programs providing such payments is referred to as public assistance, general assistance, unemployment compensation, or by the name of the specific category of eligibility, it is common to speak of these as welfare expenditures.

III.A—Public Assistance and General Assistance

Table 12 shows the specific types of public assistance and general assistance programs for fiscal year, 1970. While the specific types of public assistance are jointly funded by Federal, State, and local governments, the general assistance payments are supported only by the latter two levels for purposes of aiding persons who do not qualify otherwise under the federally funded categories. General assistance payments accounted for only about $640 million or about 5 percent of the total. In contrast, Aid to Families with Dependent Children and Medical Assistance Payments represented about two-thirds of the total, and almost 90 percent was accounted for by these two categories and Old Age Assistance. With regard to the sources of support, the Federal Government was responsible for slightly over half of these welfare costs, the States for about 38 percent and the local governments for just under 11 percent.

Footnotes for Chapter III on p. 50.

TABLE 12.—*Special types of public assistance and general assistance for fiscal year 1970*

[Dollars in thousands]

Program	Total expenditures	Source of expenditure		
		Federal	State	Local
Old age assistance	$1, 873, 505	$1, 211, 302	$577, 826	$84, 378
Aid to the blind	96, 460	55, 447	34, 381	6, 632
Aid to the permanently and totally disabled	903, 398	495, 699	336, 904	70, 795
Aid to families with dependent children	4, 081, 850	2, 187, 002	1, 442, 484	452, 365
Medical assistance	4, 794, 473	2, 440, 204	1, 865, 545	489, 722
Other special programs	363, 180	210, 686	139, 964	12, 531
General assistance	639, 615	----------	394, 266	245, 349
Total	12, 752, 482	6, 600, 341	4, 790, 369	1, 361, 771
Percentage distribution of total	100. 0	51. 8	37. 6	10. 7

Source: U.S. Department of Health, Education, and Welfare; Social and Rehabilitation Service, Sources of Funds Expended for Public Assistance Payments, fiscal year 1970 (Washington, D.C.: 1971), table 1.

In addition to the public and general assistance programs the costs of welfare broadly construed should encompass the unemployment insurance system. The major burden of this program is financed by a tax on employers of 3.2 percent on the first $4,200 of wages for each employee.[1] While the 3.2-percent tax is a Federal one, it can be offset by a tax of up to 2.7 percent for States that are willing to undertake the unemployment burden. The remainder of the tax is transferred to the Federal Government for administrative expenses. In 1970 over $4 billion in benefits were paid under the various plans.

III.B—EDUCATION-RELATED WELFARE COSTS

Not all welfare costs are education-related, and those categories that are linked to education are not likely to show the same relationship among categories. Particular expenditure components that seem to be unrelated to educational attainments are the programs for assisting the aged, the blind, and the permanently and totally disabled. Though it is true that benefits to the aged are partially related to income levels during the work life of the recipient, any effect of education on the ability to save income over the work career is difficult to assess.

In contrast, there are several categories that seem to bear a direct relationship to inadequate education. These include Aid for Dependent Children (AFDC), Medical Assistance Payments related to AFDC, and Unemployment Compensation. Each of these is directly related to educational attainment because eligibility for them is contingent on income or employment which are in turn a partial function of education. It is useful to review more specifically the effects of insufficient education on eligibility for benefits under each of these programs.

AID FOR DEPENDENT CHILDREN (AFDC)

In order to receive aid for dependent children, a family must have a dependent child under the age of 18. "Dependency" is described by the death, incapacity or continued absence of at least one parent. States may elect to define a child as "dependent"—i.e. deprived of the care and support of at least one parent—if the parents are unemployed and unable to provide support.[2] By far the most prevalent case is that in which the mother is the only parent present. In 1967 out of almost 1.3 million families receiving aid, a father was present among only 17 percent of families.[3]

In order to ascertain the role that inadequate education plays in affecting costs of AFDC, it is useful to analyze separately the situations where women are heads of households. It appears that AFDC women have substantially less education than other females who head families or than the general female population.[4] A study carried out in 1967 found that among all women about 55 percent had completed a minimum of high school; among female heads of families the figure was 42 percent; but among AFDC mothers only 20 percent had reached this level of attainment.[5] Moreover, the AFDC mothers were relatively young. While 83 percent of the AFDC recipients were less than 45 years of age, only 19 percent of female heads of household in the general population were less than 45.

Among AFDC mothers it is clear that low educational attainment is not the only obstacle to employment and earnings. Such women tend to have more children than other women which in itself reduces the probability of labor force participation.[6] A recent survey found that the greatest hindrance to employment was child care, while insufficient education ranked fifth.[7] Yet among women who were considered to be "unemployable" insufficient education was ranked third in importance.[8]

TABLE 13.—*Number of months of employment during 37-month period prior to receipt of AFDC payments, 1967*

Education level	Number of months employment				
	Unemployed	Up to 12	Up to 24	Up to 36	37
None	73.4	10.1	5.0	2.9	7.9
8	48.7	20.6	11.7	8.8	8.8
9 to 11	37.5	25.0	15.2	12.1	8.7
12	28.5	24.9	20.4	14.6	9.8

Source: U.S. Department of Health, Education, and Welfare, Social and Rehabilitation Service, "Welfare Policy and Its Consequences for the Recipient Population: A Study of the AFDC Program" (Washington, 1969), table 5.8.

The increased employability of AFDC recipients when they have higher educational attainment is reflected in Table 13 which shows the number of months of employment in the 37 months prior to receipt of AFDC payments in 1967. The probability and duration of employment was a direct function of the education level. Moreover, even when women with low educational attainment were employable, the earnings were frequently too low to make them financially independent.

A New York City study found that although 83 percent of the welfare recipients had some work experience (78 percent with more than 3 years and 28 percent with more than 10 years), work was not enough to keep them off the welfare rolls.[9]

TABLE 14.—*Educational attainment for males, March 1967*

[In percent]

Educational attainment	All males 18 to 64	AFDC incapacitated	AFDC unemployed
0 to 4 years	3.9	40.2	16.8
5 to 8 years	18.8	36.8	34.4
9 to 11 years	19.0	14.2	32.8
12 years	32.7	6.7	12.8
More than 12 years	25.3	2.2	3.2

Source: For all males, U.S. Department of Commerce, Bureau of the Census, Current Population Reports, series P-20, No. 169, "Educational Attainment: March 1967," table 1. For AFDC males, U.S. Department of Health, Education, and Welfare, Social and Rehabilitation Service, "Findings of the AFDC Study, Pt. I" (Washington, July 1970) tables 29 and 33.

In the cases where fathers are present we see a similar pattern of educational disability as reflected in Table 14. While about 58 percent of the male adult population in 1967 had completed at least 12 years of schooling only 9 percent of AFDC incapacitated males and 16 percent of AFDC unemployed males had attained this level. While the incapacitated fathers had physical and mental disabilities which kept them from competing in the labor market, an analyst who has studied this population of men believes that their poor education is relevant to their status as welfare recipients.[10] Though only about 10 percent of the men had never been employed, their poorer education often led to hazardous jobs and greater possibility of becoming incapacitated. The combination of poor job fringe benefits and low income of the poorly educated creates a situation where it is likely that the breadwinner will have insufficient insurance to cover a period of incapacitation.

In a survey of unemployed AFDC males, it was found that the largest obstacle to employability was "limited skills," a factor which itself has strong implications for education. Even so, insufficient education was considered to be the third most serious obstacle.[11]

MEDICAL ASSISTANCE AND GENERAL ASSISTANCE

Medical assistance payments for AFDC recipients is also an educationally relevant category. Such aid (Medicaid) is designed to provide medical aid to public assistance recipients. The qualifications require that the recipient be medically needy. In some cases, persons not eligible for aid under the regular four programs will become eligible for medical assistance because the inclusion of medical needs brings them into the needy category. Under this contingency there are probably individuals and families who lack adequate income to pay for required medical services because of low educational attainment, just as in the AFDC category.

General Assistance is the residual program of Public Assistance and it too appears to be linked with educational factors. The function of general assistance aid is to help the poor who are ineligible for

Federal programs: single persons; childless couples under 65 who are not disabled or blind; families with children and employed male heads; unemployed male heads in States without AFDC-Unemployed Parent provisions. Because of the vast differences in practices among States and even among counties and localities within States, it is not easy to generalize about the specific provisions of General Assistance programs. Yet the basic nature of these programs in providing support to low-income households suggests the same type of ties to insufficient education that are evident for the AFDC programs.

UNEMPLOYMENT INSURANCE

In addition to the AFDC, Medical Assistance, and General Assistance programs, the objective of unemployment insurance is to provide cash benefits to regularly employed workers during limited periods of involuntary unemployment. Accordingly, a jobless worker who meets the eligibility criteria of the State unemployment insurance laws is paid a weekly benefit based upon his earnings experience. The program is designed to cover nondeferrable expenses without reducing the incentive to work.[12] Unemployment compensation also appears to be connected with the educational attainments of benefits recipients. After the amendments to the Employment Security Act were passed in 1970, 65 million out of a total of 77 million workers were covered by the unemployment insurance system.

Since persons who have never held jobs or have worked only for short intervals are not eligible for benefits, many persons who are educationally disadvantaged are not covered by the program. Moreover, the fact that benefits are related to previous earnings means that persons with lower educational attainment and earnings will receive lower benefits. Thus, the effect of inadequate education on unemployment insurance expenditures is lower than it might be if all unemployment were covered under a uniform set of benefits.

Obviously, economic conditions affect the number of people receiving unemployment benefits; and not all those on unemployment are educationally disadvantaged in a conventional sense (witness the current plethora of unemployed engineers). Yet even during periods of very high employment there are substantial numbers of unemployment benefit recipients. During 1967, a year defined as one of "full employment," there were 4.6 million workers who received benefits totaling $2.1 billion. But it is the so-called marginal worker who is most susceptible to unemployment created by downturns in economic activity. He is the last to be hired and the first to be fired. Moreover, it is the worker who is least able to adapt to new technology because of his limited skills who is most susceptible to unemployment in industries characterized by technological change.[13] Accordingly, there are a number of reasons for concluding that inadequate education is a partial cause of unemployment insurance expenditures.

INCOME MAINTENANCE PROGRAMS

Before estimating the public expenditures on welfare that are attributable to insufficient education, it is important to note that our assessment will be based only on existing benefit levels and eligibility requirements. There are a large number of proposals on the horizon for altering substantially the present welfare system. In general these

would replace the present system of categorical aid with one that would guarantee the maintenance of a given income level for all families or individuals.[14] Under the present system there are a large number of families with very low income who receive no assistance because the head of household is employed and there are no dependent children. In such cases a shift to an income maintenance approach from the present categorical approach would increase the amount of benefits.

Because of the rise in benefits that would probably be associated with an income maintenance plan and because such a plan would tend to make benefits more closely related to education, it is likely that our present calculations will understate the importance of inadequate education in affecting the level of expenditures for possible income maintenance programs. This probability is heavily underscored by a study which attempted to examine the determinants of avoiding or escaping from poverty income levels.[15] Families headed by persons who had attained a minimum of high school completion escaped from poverty levels at a rate from 1.5 to 2 times greater than those headed by a person with less than high school graduation. It appeared that if 10 percent of those family heads with less than 12 years of schooling were to achieve high school diplomas, and other things remained constant, the poverty population would have declined by 3 percent between 1965 and 1966 rather than only 1.6 percent.

III.C—Calculating the Cost of Welfare Attributable to Inadequate Education

The education-related costs of welfare are very difficult to estimate. For each of the programs that we reviewed it can be shown that the probability of welfare eligibility and in some cases the levels of benefits are linked to low educational attainment. For example, a poorly educated woman is more likely to be the head of a family, and among family heads is more likely to be receiving benefits under the AFDC program. Yet the precise nature of these relationships is difficult to ascertain because the lesser educated woman may differ in other ways from the more educated one; and these "hidden" factors that coincide with education may also be partially responsible for the higher incidence of welfare expenditures on women with low educational accomplishments.

Given the relative uncertainty of how much of the welfare burden should be allocated to inadequate education, it seems reasonable to estimate such costs on the basis of two presumptions:

1. Only the education-related categories of welfare should be considered in the analysis; and,
2. Both an intuitive upper limit on the proportion of these expenditures attributable to poor education and a lower unit should be estimated.

It would seem that the midpoint of the range established by these boundaries would be the best assessment of the welfare costs associated with undereducation.

SETTING THE UPPER AND LOWER BOUNDARIES

In estimating costs we will set the upper boundary by assuming that 50 percent of the costs of AFDC, Medical Assistance payments for AFDC families, and General Assistance payments are attributable to educational attainments below high school completion; and 25 percent of unemployment compensation is attributable to this cause. The lower proportion assigned to unemployment compensation is based upon the fact that two provisions of this coverage make it less sensitive to low educational attainment than the other categories:

1. National economic conditions can cause highly educated people to be unemployed; and,
2. The minimum term of employment required for compensation coverage along with the fact that benefit levels are related to previous earnings act to diminish the role of insufficient education.

The lower boundaries on costs assignable to inadequate education are set at 25 percent of the public assistance programs, and 15 percent of the unemployment compensation.

TABLE 15.—*Estimated cost of welfare expenditures from inadequate education in 1970*

	Millions
Aid to families with dependent children	$4,082
Medical assistance	1,199
General assistance	640
Public assistance total	5,921
Unemployment compensation	4,322
Upper estimate:	
Public assistance total × 50 percent	2,961
Unemployment compensation × 25 percent	1,081
Upper estimate total	4,042
Lower estimate:	
Public assistance total × 25 percent	1,480
Unemployment compensation × 15 percent	648
Lower estimate total	2,128

Source: AFDC, General Assistance and Medical Assistance Expenditures—Sources of Funds Expended for Public Assistance Payments, table I. 25 percent of medical assistance payments were approximated as AFDC share. The 1968 share was 27.9 percent. See U.S. Department of Health, Education, and Welfare, Social and Rehabilitation Service, Medicaid, Selected Statistics 1951–69. Unemployment compensation payments are taken from U.S. Department of Health, Education, and Welfare, Social Security Bulletin (April 1971), table MI.

ESTIMATED EDUCATION-RELATED COSTS

Table 15 shows the estimated costs of welfare expenditures attributable to not providing a minimum of high school competition for all citizens. The upper limit of such costs is estimated to be about $4 billion a year and the lower limit is set at about $2.1 billion a year. The midpoint of this range is about $3 billion a year, a figure which we will consider as being the most reasonable overall estimate of costs of welfare incurred because of insufficient education.

According to our estimates the alleviation of inadequate education would reduce the Nation's welfare bill by about $3 billion a year. This would represent a reduction of about 15–20 percent of the present welfare burden carried by the taxpayer. To the degree that

the Nation shifts to an income maintenance program it is likely that the impact of inadequate education on welfare costs will be even greater.

Chapter IV

INADEQUATE EDUCATION AND THE COSTS OF CRIME

For the year 1965, the President's Commission on Law Enforcement and Administration estimated that the economic impact of crime and related expenditures was about $21 billion.[1] A large volume of research literature on the determinants of juvenile delinquency and adult crime concludes that low educational attainment and poor schooling are important contributors to crime. The purpose of this chapter is to estimate the role that insufficient education plays in burdening the Nation with crime and its extensive system of prevention. An attempt will be made to assess the costs to the Nation imposed by crime and the massive resources devoted to deterring it, with a specific focus on that part of costs which appears to be attributable to inadequate education of the population.

IV.A—Crime and Low Educational Attainment

There is a substantial body of statistical evidence linking low educational attainment to crime. Studies of the populations of correctional institutions have shown that inmates have completed far less schooling than the population as a whole, and achievement test measures of their proficiencies reflect the same picture. For example, when newly received felons in California institutions were tested in 1968 it was found that about 56 percent of them scored at eighth grade or below in standardized achievement, and only about 6 percent scored at the level of 12th grade or higher.[2] In comparison, the median level of attainment for the general adult population in California was more than 12 years. Further, those new inmates who had been arrested for homicide or assault had a median score at only the seventh grade level. Parallel studies for Texas and New Jersey showed similar educational retardation of inmates.[3]

EDUCATION AND DELINQUENCY

The tie between education and juvenile delinquency has been heavily documented. One study among youth in a large city found that dropping out of school doubled the probability of delinquency.[4] Further, the relationship between low educational attainment and delinquency appears to be an international phenomenon.[5] An extensive study of juveniles in Oakland found a high negative correlation between the amount of schooling and the probability of being arrested for committing a juvenile crime.[6] Even when other possible explana-

Footnotes for Chapter IV on p. 51.

tory factors that coincide with education were taken into account such as race, family size, family income, IQ scores, and presence of both parents in the home, it was found that high school dropouts were three to five times more likely than high school graduates to be arrested for committing a juvenile crime.[7] Similarly, a study of youths in Texas and Mexico found the expected negative association between educational attainment and delinquency.[8] This study concluded that:

> . . . While many studies are poorly controlled and the data are undoubtedly influenced by the fact that the more ignorant offenders are more likely to be apprehended, convicted, and sentenced to prison, there appears to be little doubt that the educational level of adult and juvenile offenders is below average, even for their own ethnic and economic reference groups.[9]

IV.B—Explanation of the Relationship Between Crime and Insufficient Education

Though the statistical studies which relate educational attainment and crime are addressed to both adult crime and juvenile delinquency, the theories linking education and the effects of school with crime concentrate on juvenile delinquency. In part this derives from the fact that a high proportion of delinquents become adult offenders, so that the schooling effects are likely to originate early in the development of the individual. In a study of male delinquents in Chicago it was discovered that 60 percent of the delinquents arrested were later arrested as adults.[10] In addition, it is somewhat easier to observe the schooling-crime link among youth than among adults.

Most of the theories posited for the higher delinquency rate of school dropouts charge that the poor quality of schooling is responsible for the low educational attainment and the related delinquent behavior. Yet, several different reasons are given for this assertion. Several researchers have concluded that the perceived irrelevance of education for later life is the major school-linked cause of delinquency.[11] In particular, those students whom the schools treat in low-status fashion (e.g., in noncollege preparatory curricula) feel that the school is preparing them for low paying jobs and so they rebel.[12]

It is also suggested that the academically competent are less likely to be delinquent because they relate well to school norms and the larger set of social norms.[13] In contrast, the delinquent is caught up in a casual chain beginning with his academic difficulties and leading to a dislike of school, rejection of school authority and finally, delinquency.[14] The school is further implicated in this chain by a study which measured intelligence test scores of juvenile delinquents.[15] It was ascertained that the delinquents performed in the normal range on such tests, and that their difficulties in school did not seem to result from deficiencies in their abilities. Rather, it appeared that deficiencies in the schools prevented such students from applying their abilities in ways meaningful and useful to the students.

Since education is an important determinant of both income and employment, it is useful to note the evidence that relates income and employment to criminal behavior. One statistical study found that a 10-percent rise in family income may be expected to reduce delin-

quency rates by between 15 and 20 percent when the income change occurs in highly delinquent areas and is of the type that will reduce the number of broken families as well.[16] In an analysis of three U.S. cities it was estimated that for each 10-percent increase in the rate of unemployment (e.g., from 5 to 5.5 percent), there appeared to be an associated increase of about 2.5 percent in the delinquency rate.[17]

In summary, there is a consistent body of evidence that ties low educational attainment to criminal behavior. Of course it should be noted that there are other possible reasons that less educated persons appear to have a higher level of criminal participation. In part, the crimes that they commit are more likely to be detected than the "white collar crimes" committed by more highly educated individuals. Further, the lower incomes of the less educated mean that they are less able to afford good legal counsel. Finally, the person with poor educational attainment is more likely to come from a less advantaged background (low income, broken home, etc.) which may in itself contribute to the likelihood of criminal behavior.[18]

IV.C—Calculating the Costs of Education-Related Crime

The President's Commission on Law Enforcement and Administration of Justice estimated the economic impact of crime for the fiscal year, 1965. Table 16 shows the magnitudes of these estimates by category. Though the total "economic" impact of crime was estimated to be about $21 billion for 1965, not all of these amounts are truly social costs in the sense that society has made sacrifices of these magnitudes. Moreover, some of the categories that are social costs do not appear to derive from crimes that are closely related to insufficient education. Further, there are other important costs that are not shown in Table 16.

Table 16.—*Economic impact of crimes and related expenditures, 1965*

	Millions
Crimes against persons:	
Homicide	$750
Assault	65
Total	815
Crimes against property:	
Property destroyed: Arson and vandalism	300
Involuntary transfer:	
Unreported commercial theft	1,400
Robbery	
Burglary	600
Larceny	
Auto theft	
Embezzlement	200
Fraud	1,350
Forgery and other	82
Total	3,932
Other crimes:	
Driving under influence	1,816
Tax fraud	100
Abortion	120
Total	2,036

TABLE 16.—*Economic impact of crimes and related expenditures, 1965*—Continued

	Millions
Illegal goods and services:	
Narcotics	$350
Loan-sharking	350
Prostitution	225
Alcohol (tax loss)	150
Gambling	7,000
Total	8,075
Public law enforcement and criminal justice:	
Police	2,792
Corrections	1,034
Prosecution and defense	125
Courts	261
Total	4,212
Private costs related to crime:	
Prevention services	1,350
Prevention equipment	200
Insurance (overhead costs)	300
Private counsel, bail, witness expenses	60
Total	1,910
Total	20,980

In order for a cost category to be considered for inclusion in our estimates of the cost burden imposed by education-related crime it must satisfy two criteria. First, it should reflect crimes that are likely to decline if there were a reduction in the incidence of inadequate education. Second, it should measure a "real" sacrifice in the Nation's resources rather than just a transfer of them from one group in society to another. Three of the categories presented in Table 16 fail to meet at least one of these criteria:

1. Involuntary transfer;
2. Other crimes; and,
3. Illegal goods and services.

In the case of involuntary transfers the crimes do appear to be edutionally related in the sense that they would probably be reduced if educational attainments were raised. Yet, it is not correct to say that the value of the transferred property is a cost to society. Such acts imply that property is being transferred from one group to another within society rather than being destroyed. Such a transfer creates a social burden only to the degree that the redistribution makes society less happy. From the viewpoint of the person who has been robbed, the loss is a real one; but from the vantage point of society the property is not lost but has just changed ownership. Accordingly, it does not seem appropriate to include the involuntary transfer category among the social costs of crime due to poor education.[19]

Likewise, though illegal goods and services have been estimated at about $8 billion, they too do not represent a loss to society of that amount. Rather, the value of such illegal transactions merely assesses the volume of such activity taking place. Within this category goods

and services are exchanged for money, and the illegal nature of the services does not, in itself, connote a loss of resources. The only social cost attached to these activities is their repugnance to society, and it is difficult to measure the costs of such displeasure. The exceptions to this generalization are the tax losses from illicit sales of alcohol, and the unreported income derived from illegitimate sources, primarily gambling. Yet, it does not seem reasonable to believe that such activities as gambling will be severely attenuated by raising educational attainments to a minimum of high school completion. Therefore we will not include the costs of illegal goods and services in our estimates of social costs which might be alleviable through better education.

The "other crimes" category, too, does not seem to be closely related to educational attainment. Though driving under the influence of alcohol or drugs may indeed be responsible for $1.8 billion in loss of income and property, it is not clear that inadequate education is a significant cause of such costs. The same appears to be true for abortion and for the estimated $100 million government loss due to tax fraud. In fact it is likely that the latter is an "educated" crime. Accordingly, it appears to be incorrect to use the costs of other crimes as a component of the total which might be reduced by improved educational levels among those with low attainment.

In contrast, the following categories seem to reflect a social burden and appear to be related to poor education. Crimes against persons accounted for about $815 million in 1965 in foregone income and medical expenditures. Property destroyed by arson and vandalism amounted to about $300 million and also appears to meet the criteria for being relevant to our estimates. Since it would seem that much of public law enforcement and criminal justice expenditures are attributable to education-related crimes (rather than such crimes as driving under the influence of alcohol or drugs), much of this category of over $4 billion should be applied to our estimates. In addition, the private costs related to crime of almost $2 billion should be considered for similar, reasons.

Not reflected in Table 16 is the loss of income and national output reflected by the large source of manpower that is imprisoned. In 1965 the average daily adult population of correctional institutions was approximately 363,000 and the median wage for males for that year was about $4,400. Because of the lower educational attainments of inmates and the fact that a portion of them were female, it is certain that the median wage for all males overstates the loss in income for each prisoner. Using a more modest figure of $3,000 per person to approximate the annual income foregone, the national sacrifice in income reflected by the prison population was about $1.1 billion in 1965. In order to account for the modest amount of work done by prisoners and for time allocated to training programs that were sponsored by the institutions, this amount can be reduced by $100 million. Thus the net estimate of foregone income of inmates for 1965 is about $1 billion.

TABLE 17.—*Estimated costs of crime attributable to inadequate education*

	Millions
Costs of crimes against persons and property:	
Homicide	$750
Assault	65
Arson and vandalism	300
Total	1, 115
Law enforcement and judicial	4, 212
Private costs	1, 910
Foregone income of inmates	1, 000
Total	8, 237
Attributable to inadequate education:	
Upper limit, 50 percent of total	4, 118
Lower limit, 25 percent of total	2, 059

Table 17 shows the estimated costs of crime attributable to inadequate education. The categories of costs that we selected as being relevant amounted to an annual burden of about $8.2 billion in 1965. Unfortunately our present state of knowledge does not enable us to know the exact proportion of this amount that is attributable to insufficient education *per se*. Thus, any specific guideline must be an arbitrary one. Placing the upper limit on educational-related costs among these categories at 50 percent, the estimated cost of crime due to poor education is about $4.1 billion. Assuming that a reasonable lower limit is 25 percent, the lower boundary of the estimate is set at about $2 billion. Using the midpoint of this range as the best estimate, *the costs of crime attributable to inadequate education for the year 1965 were about $3 billion.* Assuming that our method of estimation is acceptable, the comparable burden should be considerably higher for 1971 because of rising costs and rising crime rates.

Chapter V

OTHER SOCIAL COSTS OF INADEQUATE EDUCATION

In preceding chapters we reviewed the social costs of inadequate education as they were reflected in foregone national income and government revenues, costs of welfare and costs of crime. In this chapter we will explore some of the evidence linking inadequate education to low political participation, lack of intergenerational social mobility, and poor health. Although it was possible to estimate the dollar value of social costs in the preceding section, it is far more difficult to put a monetary cost on the social burdens imposed by these three categories. Accordingly, the following brief analysis will be limited to the implications of insufficient education for political participation, mobility, and health.

V.A—Inadequate Education and Political Participation

The general phenomenon whereby educational shortcoming for the individual harm the entire society is exemplified by the particular relation between low educational attainment and political participation. As the most noted authority on the subject has stated, "the surest single prediction of political involvement is number of years of formal education." [1] That is, the poorly educated citizen is less likely to participate in the normal political processes of our society. Thus, he not only deprives himself of a voice in the functioning of the government, but he is also likely to feel powerless to exert influence on public policies that affect his existence. The social costs of this phenomenon are visited upon the Nation in three ways:

1. Government decisions will be less likely to represent the views of "all of the people" particularly the less educated; this will tend to impart a bias to public policy that will favor the more educated and wealthy than would be the case if political participation were more representative.
2. This bias in participation creates a crisis of legitimacy of political processes among those who, because of their insufficient education, do not participate. Government decisions are likely to be looked upon with suspicion as ones which are designed to work against the interests of the poorly educated.
3. As a consequence of their frustration, such citizens may turn to other forms of activity to express their dissatisfaction with existing government policies and public services. In recent years demonstrations, riots, and other disruptions have represented an alternative form of activity that has been used to express dissatisfaction with the results of the traditional political processes.

Footnotes for Chapter V on p. 51.

THE ROLE OF EDUCATION IN POLITICAL INVOLVEMENT

The reasons that persons with lower educational attainments are less likely to participate in conventional political processes are probably complex. In part the lowly educated may be less likely to participate politically because they don't believe that it will make any difference in their plight. To the degree that most of the under-educated are themselves born into poor families, their outlook may be more conditioned by what they perceive as the overall hopelessness of improving their condition rather than by their educational level *per se*. Yet the impact of the school on the political attitudes of children appears to be substantial. In a study of some 10,000 elementary school students in grades two through eight it was concluded that the school is the "central, salient, and dominant force" in the political socialization of the young child." [2]

What are some of the specific ways in which more education might tend to increase political participation? First, schooling inculcates persons with a knowledge of the overall governmental structure; how representatives are elected; how laws are passed; the role of the executive branch of government and the courts; and how laws might be changed. Knowledge of the institutions and their formal purposes emphasize the fairness of a system of representative government and its theoretical set of checks and balances, and this familiarity is likely to connote an impression of legitimacy. Second, schooling gives information on the practical aspects of how the political system works; the importance of voter registration; referenda that can be placed on the ballot by citizen initiative; and the importance of exercising one's franchise. Finally, education is an important input for access to information on many important political and social issues and tends to create a greater personal predisposition toward concern over political matters.

STUDIES OF POLITICAL BEHAVIOR

These factors linking education with political behavior have been supported by numerous studies that have explored various aspects of political involvement. A recent survey by the Bureau of the Census on the 1968 presidential election as well as earlier surveys carried out by other groups has confirmed that the likelihood of voting is directly related to the educational attainment of the population. Table 18 shows this pattern for the 1968 presidential election, and earlier studies have confirmed this finding even when the data are analyzed separately by age, sex, and region of the Nation.[3] Indeed, the conclusion of these studies is that ". . . no other social characteristic bears such a strong relationship to turnout in presidential elections as education."

TABLE 18.—*Reported voter participation in 1968 presidential election*

Years of schooling	Proportion voting			
	Whites		Blacks	
	Males	Females	Males	Females
0 to 4	45.4	32.0	43.2	34.7
5 to 7	60.5	46.1	54.9	53.5
8	68.4	59.8	59.7	53.3
9 to 11	67.5	62.7	61.7	59.4
12	76.3	75.6	74.8	69.5
13 to 15	80.7	82.5	79.7	79.4
16	85.2	84.2	85.8	83.7
17 or more	86.4	88.3	88.4	

Source: U.S. Department of Commerce, Bureau of the Census, "Years of School Completed—Reported Voter Participation in 1968 and 1964 for Persons 25 Years Old and Over, by Race and Sex, for the United States: November 1968," Current Population Reports, series P 20, No. 192, table 11.

Researchers have concluded that the deeper political involvement of the more highly educated stems not only from the direct schooling effects outlined above, but from several indirect ones as well. Persons with additional education seem to come into contact with more political stimuli and they have attitudes, beliefs, and behavior which are more politically oriented.

An environment containing political stimuli will tend to increase both the likelihood of an individual participating in politics and the depth of participation.[4] The lower the level of educational attainment of an individual, the less likely that he will have extensive contact with other persons who are politically involved; this in itself reduces the stimulus for him to become politically concerned. Thus it was found that the proportion of persons who discuss politics among both males and females increases according to their educational attainment.[5] Moreover, the level of sophistication for evaluating the good and bad points of particular candidates and issues seems to be directly related to the amount of schooling completed.[6]

Psychological involvement with political life is not only related to the likelihood of voting; it is also associated with other political activity such as campaigning;[7] and psychological involvement in politics appears to be strongly dependent upon formal education.[8] Research has also tied a sense of political efficacy—the sense of ability to affect political events—to be positively associated with schooling attainment.[9] Even such politically related attitudes as a "sense of citizen duty" seem to be closely related to education. Thus, the deleterious effect of inadequate education on political involvement appears to be substantial and tends to impair the effective functioning of our political system.

V.B—INADEQUATE EDUCATION AND INTERGENERATIONAL MOBILITY

The children of parents with inadequate education are themselves likely to suffer from inadequate education, low income, and low occupational status. This vicious circle of low attainment and poverty tends to repeat itself generation after generation unless there is a powerful social intervention. To the degree that we can raise the

educational attainments of future parents, we have also succeeded in raising the educational levels of their children. That is, the amount of schooling which children complete is heavily dependent upon their parents' education. Research has shown that not only is a child likely to attain more schooling the higher his parents' educational attainments, but he is also likely to show higher scores on standardized achievement tests at every level of schooling.[10] Thus the alleviation of inadequate education in this generation will likely have a salient effect on reducing it in the next generation as well. Conversely the present burden of undereducation will likely translate into future costs for the society that our children inherit.

V.C—Inadequate Education and Poor Health

A number of studies have explored the relation between education and health. Inadequate education can affect health levels in a variety of ways. First, less educated persons are not as likely to be aware of the symptoms of certain serious illnesses whose early detection is crucial for cure or control. Second, knowledge of nutritional requirements, prenatal care, and preventative health precautions for such conditions as venereal disease are apparently less widespread among persons who lack adequate schooling. Finally, since insufficient education leads to lower occupational attainments and earnings appears to create both psychological and other health or disability problems.

The specific role of education in exacerbating health problems has been addressed in several studies.[11] Usually though, the educational factors are subsumed under other related socioeconomic factors such as occupation, which are in themselves heavily influenced by educational attainment.[12] The lower the occupational level of fathers, for example, the higher the rate of infant mortality both during the fetal stage and during early childhood.[13] A similar pattern is reflected in death rates of adults and the incidence of disease according to occupational category. A study of severe psychological disorders found that the lower socioeconomic groups were much more likely to fall prey to schizophrenia and paranoia than the higher groups.[14] Here again the role of inadequate education was strongly implied.

V.D—Summary of Other Social Costs of Inadequate Education

Some aspects of inadequate education represent burdens to the Nation that cannot be assessed according to their monetary values. Included in this category are the lower levels of political participation, intergenerational mobility, and health that seem to be associated with low educational attainment. In each of these cases there is evidence suggesting that national welfare is reduced because of inadequate education, but the dollar value of such sacrifices is impossible to estimate. Nevertheless, these aspects of inadequate education represent national costs in addition to those reflected in foregone income and tax revenues, higher welfare burdens, and the greater incidence of crime.

FOOTNOTES

Chapter I—Introduction

1. See Horace Mann (1849), p. 60.
2. Arthur Mann (1968), p. 14.
3. For a discussion of the mechanism that leads to this result see J. Coons, W. Clune, and S. Sugarman (1970).
4. For some evidence on occupational attainment see Peter M. Blau and Otis D. Duncan, (1967). Bowles has asserted that the role of education in improving occupational attainment has been overstated by Blau and Duncan in Bowles (1971). The relation between parental social class and children's scholastic achievement is documented in James S. Coleman *et al.* (1966), Chapter 3. Evidence on educational attainment is found in M. David, H. Brazer, J. Morgan and W. Cohen (1961); B. Duncan (1965); and S. Masters (1969).
5. See particularly, J. W. Guthrie *et al.* (1971); H. M. Levin (1971); *Harvard Educational Review* (1968); S. Bowles (1972).
6. The most severe criticism of the institution of schooling is found in I. Illich (1969) and (1971). The repressive effect of the present schooling approach is emphasized in C. Silberman (1970). The role of the schools in sustaining social class inequalities is emphasized in S. Bowles (1972).
7. The present author believes that vast structural reforms of our society would have to take place before schools would alter substantially their functions. That is, the schools reflect well the social demands placed upon them. Thus, no significant changes in schooling will occur without profound changes in the underlying social, political, and economic structure of the Nation. This view is much closer to that of Bowles than to that of Silberman who seems to think that his criticisms result from outcomes that are only the unintentional by-products of institutional "mindlessness". Compare Silberman (1970) with Bowles (1972). Also see Carnoy (1972).
8. This fact is well documented in a study which examined the ability of respondents to fill out correctly the standard applications for licenses, Medicare, and so on. The number of errors on these applications appeared to be particularly high for the least educated. For example, almost half of the respondents with 8 years of schooling or less filled out *incorrectly* at least 10 percent of the items on the application for Medicare. See L. Harris Associates (1970).
9. A discussion of literacy concepts is found in *Harvard Educational Review* (1970).
10. For a thoughtful purview see B. Weisbrod (1964).

Chapter II—Investment in High School Completion

1. Examples of the literature reflecting this are R. Weiss (1970); L. Thurow (1969); and S. Michelson (1968).
2. In addition to the sources cited in footnote 1, see G. Becker (1964); and R. Hauser, K. Lutterman, and W. Sewell (1971).
3. G. Becker (1964), pp. 29–30.
4. This thesis is developed with substantial supporting evidence in H. Gintis (1971).
5. R. Dreeben (1968).
6. See R. Nelson and E. Phelps (1966) for a discussion. Also see T. Schultz (1963), pp. 40–41. For interesting sociological perspectives see L. Reissman (1954).
7. D. P. Chaudri (1968) and F. Welch (1970).
8. F. Welch (1970).
9. R. Eckaus (1964).
10. Ivar Berg (1970) has questioned the schooling-productivity link, but his empirical substantiation has been criticized on many grounds. See for example the comments in M. J. Bowman (1970), pp. 106–110.
11. According to data derived from 1964 tax returns the proportion of adjusted gross income attributable to salaries and wages varied between 78 to 90 percent for income classes up to $25,000 with no obvious trend within that range. C. H. Kahn (1964), p. 28.

12. H. P. Miller (1960); Z. Griliches (1970).
13. Welch (1970).
14. Further discussion of relative earnings by educational category is found in S. Bowles (1970) and G. Johnson (1970–71).
15. In this context "ability" means all of the non-schooling influences that affect income such as social class and geographic location as well as intellectual abilities.
16. Compare Griliches (1970) with Taubman and Wales (1970).
17. L. Hanson, B. Weisbrod, and W. Scanlon (1970).
18. Z. Griliches (1970); Z. Griliches and W. Mason (1971); J. Hause (1971); D. Rogers (1969).
19. J. Hause (1971).
20. U.S. Department of Commerce, Bureau of the Census, "Annual Mean Income, Lifetime Income, and Educational Attainment of Men in the United States for Selected Years, 1956 to 1968".
21. L. Thurow (1969); R. Weiss (1970); F. Welch (1967); B. Bergman and J. Lyle (1971); G. Hanoch (1967).
22. U.S. Department of Commerce, Bureau of the Census "The Social and Economic Status of Negroes in the United States, 1970".
23. S. Marglin (1963); Arrow (1966); Weisbrod (1969).
24. S. Masters (1969); B. Duncan (1965); M. David, H. Brazer, J. Morgan, and W. Cohen (1961).
25. See Weisbrod (1968) for a discussion of the necessity for considering the distribution as well as the level of benefits from public investments. The probable improvement in income distribution in the next generation is a benefit that is not measured by lifetime income streams for this generation.
26. See Appendix B for information on construction of Table eight.
27. It should be noted that the continuation on to college was based upon nonwhite continuation rates. These rates of college attendance are only about half those of whites.
28. See Appendix D for details. The overstatement of costs results from the fact that potential dropouts are more likely to be attending schools in low expenditure states and school districts. In part their tendency to drop out is related to low spending as evidenced in G. Johnson and F. Stafford (1970). Therefore, the national average for per student expenditures overstates what would have been spent on dropouts had they continued. It might also be noted that estimates of the national average were based upon generous assumptions. This over-estimate might be offset by the fact that we did not take into account the "opportunity cost" of expenditures up to the beginning of the earnings period, at which point the investment is being evaluated.
29. A recent econometric study has demonstrated a relationship between educational expenditures and the amount of schooling attained. See G. Johnson and F. Stafford (1970).
30. The system of financing education that leads to this result is described in J. Coons *et. al.* (1970). The educational effects of this system are explored in J. Guthrie *et. al.* (1971).
31. Rarely do present programs provide more than $300 in additional funds per eligible student, and many potential dropouts receive no assistance at all because of inadequate appropriations.
32. For a discussion of these issues see S. Michelson (1970) and H. Levin (1971a). This may also be the reason that at least one dropout prevention program has shown poor results. See B. Weisbrod (1965).

Chapter III—Inadequate Education and Welfare Expenditures

1. Until January 1, 1972 the tax was on the first $3,000.
2. See the President's Commission on Income Maintenance Programs, *Background Papers*, p. 272.
3. U.S. Department of Health, Education, and Welfare, *Findings of the 1967 AFDC Study, Part I*, July 1970, Table 22.
4. J. Cowhig (1970); I. Cox (1970).
5. I. Cox (1970).
6. *Ibid.*
7. M. Warren and S. Berkowitz (1969).
8. *Ibid.*
9. E. Durbin (1969), p. 68.
10. R. Mugge (1964).
11. M. Warren and S. Berkowitz (1969).

12. For more details see U.S. Department of Labor, Manpower Administration, *Historical Statistics of Employment Security Activities, 1938–1966*, pp. 10–11.
13. In a U.S. Department of Labor Study comparing "job losers" with "job leavers", it was found that male "job losers" had a median level of schooling 10.7 years while "job leavers" had 12.1 years. For women the comparable figures were 11.3 years vs. 12.3 years. U.S. Department of Labor, "Job Losers, Leavers, and Entrants," Special Labor Force Report No. 106 (April 1969), Table 2.
14. See the *Reports* of The President's Commission on Income Maintenance Programs.
15. T. Kelly (1970).

Chapter IV.—Inadequate Education and the Costs of Crime

1. The President's Commission on Law Enforcement and Administration of Justice, Task Force on Assessment, *Crime and Its Impact—An Assessment* (Washington, D.C.: 1967).
2. State of California, Department of Corrections (1970).
3. Summarized in E. H. Sutherland and Donald Cressey (1966).
4. E. Palmore (1963).
5. J. Toby (1967).
6. R. Spiegelman *et. al.* (1967), pp. V.6–V.24.
7. *Ibid.*
8. C. Rosenquist and E. Megargee (1969).
9. *Ibid.*, p. 201.
10. H. McKay (1967).
11. See for example I. Berg (1967); A. Stinchcombe (1964); W. Schafer and K. Polk (1967).
12. A. Stinchcombe (1964).
13. T. Hirschi (1969).
14. *Ibid.*
15. N. Prentice and F. Kelly (1963).
16. B. Fleisher (1966).
17. B. Fleisher (1963).
18. J. Toby (1967).
19. The fact that we are not imputing any social cost to the involuntary transfer and illegal goods and services categories will tend to underestimate the social costs of crime. Yet this alternative seems superior to setting an arbitrary value for such costs in such an unknown domain.

Chapter V—Other Social Costs of Inadequate Education

1. A. Campbell (1963), p. 21.
2. R. Hess and J. Torney (1967).
3. A. Campbell, P. Converse, W. Miller, and D. Stokes (1960), p. 495.
4. These issues are discussed in L. Milbrath (1965). Particularly types and effects of political stimuli are studied in G. Almond and S. Verba (1963); B. Berelson, P. Lazarfeld, and W. McPhee (1954); P. Converse and G. Dupeux (1962); S. Lipset (1960); and M. Miller (1952).
5. A. Campbell, P. Converse, W. Miller, and D. Stokes (1960), p. 491.
6. *Ibid.*; also G. Almond and S. Verba (1963); M. Benny, A. Gray, and R. Pear (1956); and other references in reference 4.
7. A. Campbell, P. Converse, W. Miller, and D. Stokes (1960); A. Campbell, G. Gurin, and W. Miller (1954); Y. Kuroda (1964).
8. A. Campbell (1962), p. 20.
9. G. Almond and S. Verba (1963); and A. Campbell, P. Converse, W. Miller, and D. Stokes (1960).
10. M. David, H. Brazer, J. Morgan, and W. Cohen (1961); B. Duncan (1965); S. Masters (1969); J. Coleman *et al.* (1966).
11. B. Benjamin and H. Haycocks (1970); National Institute of Child Health and Human Development (1969).
12. That is, many studies use occupation, income, or other measures of social status rather than educational attainment to indicate socio-economic level. But, both income and occupation are themselves substantially determined by education. See for example P. Blau and O. D. Duncan (1967).
13. H. Chase (1962).
14. I. Mouyania and L. Guralnick (1958); J. Daric (1951); J. Downes (1948); W. Logan (1954).

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Appendix A

NONWHITE MALES AS PROPORTION OF ALL MALES 25–34 YEARS OLD

Educational attainment	Numbers in thousands		Nonwhite as percent of total
	Nonwhite	White	
Less than 8 years	145	337	21.3
8 years	85	561	13.2
9 to 11 years	353	1,499	19.1
12 years	491	4,161	10.6
13 to 15 years	116	1,602	7.2
16 years	71	1,191	5.6
17 or more years	61	960	6.0

Source: Based on data in U.S. Department of Commerce, Bureau of the Census, "Educational Attainment: March 1969," Population Characteristics, Current Population Reports, Series P–20, No. 194 (February 1970), table 1.

Appendix B

PROCEDURES USED TO OBTAIN LIFETIME INCOMES FOR WHITES AND NONWHITES

The U.S. Department of Commerce reported estimates of lifetime incomes by both age and educational level for males in 1968. (Current Population Reports, Series P–60, No. 74, Table 10). These estimates were not reported separately by race. Given the objective of obtaining expected lifetime incomes by race we used the following steps:

1. Estimates of lifetime income for all males from age 18 were selected for each education level. Persons who had not completed high school would likely have received some income before age 18. Therefore, we arbitrarily added four years of income to the expected lifetime incomes for those with less than eight years of schooling and two years of income for those with some high school. Annual earnings at age 18 was the level for this extra supplement. This adjustment resulted in estimates of lifetime income at the time of departure from school. These figures were based upon the assumption of a zero discount rate and a zero rate of increase in labor productivity. To the degree that the expected annual increase in labor productivity is about three percent these estimates assume tacitly a three percent discount rate.

2. Conversion of these overall figures for all males to separate estimates for whites and nonwhites was done by using the relative incomes of the two groups by educational level that were derived in another Department of Commerce study ("The Social and Economic Status of Negroes in the United States, 1970," Special Studies; Current Population Reports, Series P–23, No. 38, p. 34.) These weights are shown in Table seven on page 36 of this Report. In this adjustment the relative incomes of Negroes were used to represent those of all nonwhites since specific data for the nonwhite group were not available.

Appendix C

TAX REVENUES IN THE PUBLIC SECTOR

TABLE C.1.—FEDERAL AND STATE-LOCAL TAX REVENUES AS PROPORTION OF PERSONAL INCOME, 1969

[Totals in millions of dollars

Type of tax	Federal	State-local
Personal	95, 822	13, 876
Corporate profits	39, 169	3, 483
Indirect business	17, 996	63, 935
Total	152, 987	81, 294
Personal income	748, 874	

Note: Federal taxes/personal income—20.4 percent. State-local taxes/personal income—10.9 percent. Total taxes/personal income—31.3 percent.

Sources: U.S. Department of Commerce, Office of Business Economics, Survey of Current Business (July 1970) tables 2-1, 3-1, and 3-3.

TABLE C.2—GOVERNMENT TAX REVENUES AS A PERCENTAGE OF PERSONAL INCOME 1949-69

Revenue source	1949	1954	1959	1964	1969
Federal	16.3	19.1	19.4	18.2	20.4
State-local	7.2	7.6	8.7	10.0	10.9
Total	23.5	26.7	28.1	28.2	31.3

Source: Tax data: U.S. Department of Commerce, National Income and Product Accounts of the United States, 1929–65. (Washington, D.C.: 1965), tables 3-1 and 3-3 and U.S. Department of Commerce, Survey of Current Business (July 1970), tables 3-1 and 3-3, Personal income: National Income and Products Account, table 2-1. Survey of Current Business, table 2-1.

Appendix D

ESTIMATES OF EDUCATIONAL INVESTMENT COSTS

The costs of educational investment can be divided into direct and indirect ones. The direct costs include the expenditures on schooling whether from public or private sources, and the indirect ones include the earnings foregone during the additional schooling period. Since the estimates of lifetime income by educational level already account for the fact that those with more schooling forego earnings during the schooling experience, the estimates of costs in this analysis are estimates of direct costs alone, so-called educational expenditures. Moreover, it was assumed that such expenditures are borne completely by the government.

Elementary and Secondary Expenditures

The U.S. Office of Education reported that average current expenditures per student (in average daily membership or enrollment) was $812 in 1970 at the elementary and secondary level.[1] Since per pupil expenditure at the elementary level is estimated to be only about 60 percent of that at the secondary level, current average expenditures were assessed at $1,065 per secondary student.[2] Capital outlay was estimated by the U.S. Office of Education at $5.1 billion for a per-pupil average of $149. Adding the average capital outlay of $149 to the average current expenditure of $1,065 yields a total annual expenditure for a secondary student of about $1,214. This value was used to assess the costs of of additional years of schooling at the elementary and secondary levels to bring all persons up to high school completion.

[1] U.S. Department of Health, Education, and Welfare, Office of Education, *Fall 1970 Statistics of Public Schools*, Advance Report, OE-20119-70, (Washington, D.C.: February 1971).

[2] See W. Lee Hansen, "Total and Private Rates of Return to Investment in Schooling" *Journal of Political Economy* (April 1963), pp. 128-40, and T. W. Schultz, "Capital Formation by Education," *Journal of Political Economy* (December 1960), pp. 571-83.

Higher Education Expenditures

The U.S. Office of Education also publishes financial statistics for institutions of higher education.[3] Based upon these figures the average educational and general expenditure per student in 1967–68 was $1,905.[4] This figure does not include the annual stream of capital costs. The book value of physical plant assets of all institutions was $34.6 billion.[5] Using a ten percent combined rate for interest and depreciation and dividing it among students yields a capital cost of about $640. The average total annual cost per college student is about $2,545.

Other Factors in Assessing Investment Costs

When evaluating an investment it is important to assess both costs and benefits in terms of their present value (at the time the evaluation is made). Since the educational investment is incurred at the beginning of a person's lifetime and the income benefits are recouped much later in time, the process of discounting future cost or benefit streams would reduce the present value of benefits relatively more than that of costs. Though we did not apply an explicit discount rate to future incomes, the fact that we failed to adjust incomes upward for future increases in productivity was tantamount to using a tacit discount rate of 3 percent where the benefit stream was evaluated beginning at age 18 for all except those who did not complete high school. But if educational investments are evaluated at age eighteen then the expenditure stream must be inflated by an interest rate to account for the opportunity cost of educational investment up to that point in time. Since we have not done so there is a tendency to understate educational costs relative to income benefits.

The downward bias in estimates of costs would seem to be more than offset by other factors that lead to overstated costs. These factors include the following:

1. We have used cost data from 1970 for elementary and secondary education and for 1967–68 for higher education. Yet the average 25–34 year old in the sample was at the middle of his elementary-secondary career some 20 years prior to the present period. Since the real costs of education more than doubled over that span of time, we are using cost estimates per pupil that are twice the level of those that actually produced the observed income patterns for 25–34 year olds.
2. Higher education costs are overstated for identical reasons as well as the fact that our estimates include such non-instructional costs as research and extension services.
3. Persons who did not complete high school were more likely to be found in States and school districts with less than average expenditure. Therefore our use of an average expenditure measure will tend to overstate the lower boundary on costs which was computed on the basis of applying the prevailing level of expenditure to additional years of school completed.

Appendix E

COMPARISON OF EDUCATIONAL ATTAINMENTS BETWEEN 1969 AND 1971 FOR MALES 25–34 YEARS OF AGE

At the time that this study was executed, the best data available for linking schooling to income were those collected in the 1968–69 period. Accordingly, Section II of this Report utilizes census data from 1969 to explore the number of males 25–34 years of age who had not completed high school. In December 1971 the Bureau of the Census released data on educational attainment for March 1971. Table E.1 shows the distribution of educational attainment for Males 25–34 years of age by race. In comparing this table with Table 4 of this Report which shows the comparable figures for 1969, we observe that:

1. Among nonwhite males in this age bracket, 44 percent lacked high school completion in 1969 and 43.6 percent lacked this attainment in 1971.

[3] U.S. Department of Health, Education, and Welfare, Office of Education, *Financial Statistics of Institutions of Higher Education, Current Fund Revenues and Expenditures 1967–68*, HE 5.252: 52010–68 (Washington, D.C.: 1969).
[4] *Ibid.*, p. 8.
[5] *Ibid.*, p. 3.

2. Among white males in this age bracket 24.7 percent lacked high school completion in 1969 and 21.6 percent lacked this attainment in 1971.

From these observations it appears that there has been no change for nonwhites and a rather significant change for whites. Had we used data for 1971 in the analysis the overall conclusions would have been similar to the present ones although the total national income foregone and investment costs for alleviating inadequate education would have been reduced by a modest amount. The relatively large social payoff to each dollar of investment in reducing inadequate education would remain unchanged.

TABLE E.1—EDUCATIONAL ATTAINMENT FOR MALES 25–34 YEARS OF AGE MARCH 1971, BY RACE

	Elementary		High school		College					
Number in thousands and percentage	Less than 8 years	8 years	1 to 3 years	4 years	1 year	2 years	3 years	4 years	5 or more years	Total
White males	457	554	1,392	4,535	703	809	346	1,317	1,035	11,149
(percentage)	(4.1)	(5.0)	(12.5)	(40.7)	(6.3)	(7.3)	(3.1)	(11.8)	(9.3)	(100)
Nonwhite males	152	99	381	514	53	69	24	91	65	1,448
(percentage)	(10.5)	(6.8)	(26.3)	(35.5)	(3.7)	(4.8)	(1.7)	(6.3)	(4.5)	(100)

Source: U.S. Department of Commerce, Bureau of the Census, "Educational Attainment: March 1971" Population Characteristics, Current Population Reports, Series P–20, No. 229 (December 1971).

CORRESPONDENCE

JUNE 14, 1972.

Dr. JERALD G. BACHMAN,
Survey Research Center, University of Michigan,
Ann Arbor, Mich.

DEAR DR. BACHMAN: I received a newspaper article, referring to a study that you and your colleagues had completed, that assesses the impact of dropping out of school. Since I have recently completed a study that has very different conclusions, I would appreciate very much a copy of your report in order to ascertain the cause of our differences.

As you are undoubtedly aware, the main cause of earnings differences between high school graduates and dropouts is the higher level of employment of the former. Since the newspaper article on your Report suggests that the earnings of the dropouts exceed those of graduates, the implication is that the employment experience of the two groups is the same or is superior for the dropouts (assuming hourly earnings that are about equal). Can this really be true for a national probability sample given the Department of Labor and the Census findings on employment by educational attainment? I have enclosed a copy of my Report.

Sincerely,

HENRY M. LEVIN, *Associate Professor.*

JUNE 22, 1972.

DR. HENRY M. LEVIN,
Associate Professor, School of Education,
Stanford University, Stanford, Calif.

DEAR DR. LEVIN: Thank you for your letter of June 14 in which you inquired about our research on high school dropouts. I am enclosing for your information a copy of our monograph on dropping out, an earlier monograph on family background and ability, a final report which summarizes many project findings, and a couple of recent articles based on the dropout monograph. (The articles overlap each other and the final chapter of the dropout book to a considerable degree, so if you read them all you will get the feeling that you've heard some of the story before. I've included the articles because they give a quick overview and because they give you some idea of the way in which I've presented our results to a more general audience than those who use the monograph.)

I appreciate the copy of your report which you included with your letter. I have had a note on my desk for about a month reminding me to write and ask for it, ever since reading newspaper accounts of your study in mid-May. I've read your report with interest, and can offer some reactions and observations.

First let me respond to the question raised in your letter. You noted that most of the difference in earnings between dropouts and graduates is due to the lower rate of employment (higher unemployment) of the dropouts. Our Youth in Transition project did indeed find higher unemployment among dropouts, and I think every newspaper and magazine account I've seen based on our study has stated that fact. We also assert that the unemployment differential between dropouts and graduates is explainable *largely* in terms of background and ability. That conclusion is very different from your own, I realize, and I want to discuss it further in a moment or so. First let me work through some other areas where we differ.

On your second page you state that ". . . the schools tend to be far more effective in providing mobility and status for the middle-class child than the lower-class one. The result is that occupational success, scholastic achievement, and educational attainment of children are still positively correlated with those of their parents." That statement says nothing about some other very powerful factors that would operate to produce such a correlation no matter what formal schooling occurred after the age of five or six—in particular, genetic endow-

ments and childrearing practices. Surely you would not deny that genetic endowment plays some significant part in determining an individual's intellectual abilities (and other abilities as well). And I trust you agree that early childrearing practices probably play an extremely important role in forming both intellect and "character." Therefore, would it not be more parsimonious to say that educational attainments of parents and children are correlated because of:

(a) heritability of intellectual skills;

(b) early (and later) learning in the home (including family emphasis on the value of education); and

(c) *perhaps* differences in school characteristics that are correlated with family background differences.

I emphasize the "perhaps" part of that statement because our own research and our reading of other studies, has led us to be very skeptical about claims for large "school effects." Of course, studies working with aggregate data show that students from rich schools do better than students from poor schools. But students from rich schools also come from rich homes, on the whole. So which is the more important determinant, the rich home or the rich school? Our analyses from the Youth in Transition project indicate that we can account for substantial differences in occupational and educational aspirations and attainments by examining family background, whereas knowing such things as per-pupil expenditures *add* virtually nothing to our ability to predict or explain such aspirations and attainments. But might this mean (as was often stated in analyses of the Coleman Report findings) that we are "overcontrolling" when we remove family background effects? I think not. When we group respondents in our study according to several brackets of family socioeconomic level and then look at the fairly substantial variations in school characteristics which remain, we find that a "middle class" student (or "upper middle" or "lower class" student) in a "richer" school does no better on the average than his socioeconomically matched counterpart in a "poorer" school. This is not what we set out to find, and it has taken some time to get used to the idea that we are not finding school effects. Nevertheless, I have come to the conclusion that this is pretty much the way things are.

How can we interpret the lack of differential school effects? One possible explanation is that our efforts toward universal education and equality of educational opportunity are more successful than we realized, and that public schools throughout the Nation are more similar than they are different. As one author put it, ". . . the very fact that education is so widespread and so obviously successful may reduce its importance as a source of individual differences in ability in this country." (This argument is developed in pages 18–30 of a chapter that Lloyd Johnston and I recently completed: "The functions of educational institutions in adolescent development." A copy is enclosed.)

Getting back to your report, you state on page 10 that:

> . . . the race for success should begin on the same starting line for all competitors. It would seem that this is what is implied by equality of educational opportunity. As in any competition, the race will still be won by the swiftest, but at least everyone will start at the same place. Persons who lack high

school completion begin the quest for employment, earnings, occupations, and so on with severe disadvantages relative to those who have received high school diplomas and further schooling.

(The "race" metaphor reminds me of those anti-dropout commercials of a few years ago which showed a dropout in a track suit trying to run "the race of life" while wearing lead boots—remember that one?) You give the impression that the starting line for the race is at the point of entry into the job market. But would it not be much more realistic to admit that the race has been taking place throughout the whole schooling experience, and that youngsters enter kindergarter already quite *un*equal in terms of their start in life? If the race is to be won by the swiftest, what determines who is swift? Is it not those very abilities and effects of family experience which have so much to do with the correlation between parents' and children's educational attainments? I hate to belabor the point, but I just don't think you can have it both ways—if some are more swift than others, then they will be out in the lead long before they leave *junior* high.

Let me offer just one more reaction to the thinking of Chapter 1, before turning to the rest of your report. I find it hard to justify singling out the point of high school graduation as the defining line for adequate versus inadequate education. According to your data on lifetime incomes (Table 8), the differences between those who end their education with high school graduation and those who do not are much less dramatic than the differences between those who do and do not graduate from college. Why not, therefore, assert with equally convincing logic that anyone not completing *college* will ". . . begin the quest for employment, earnings, occupations, and so on with severe disadvantages . . ."? (As a matter of fact, I think one really could develop a good economic argument that college ought to be made available *to anyone who wanted it*, and at public expense. But this is vastly different from saying that *everyone ought* to go to college as a matter of national policy.)

Turning to Chapter 2, I find several problem areas. In your discussion of schooling, productivity, and income, you mention three reasons why workers with more education are likely to earn more. But you leave out what may be the most important reason, especially in the case of the high school dropout: the credential value of an education. People take equivalency exams to get certification of high school graduate status, not because taking an exam teaches them something, but because they recognize the credential value of a high school diploma. To the extent that this credential function is what makes high school graduation so important, we can solve the inequality problem by deemphasizing the credential, or else by making sure everyone has it. (Your proposal to get everyone through high school would accomplish the latter. I think a simpler path to that same outcome might be to grant the diploma after 10th grade.)

One of the possible reasons you give for schooling leading to success in jobs is that schooling may ". . . inculcate persons with specific attitudes and behaviors that help them to function in the large bureaucratic enterprises that characterize much of both the government and the private sector." I confess to having mixed emotions about the degree to which we already "process" students to function in bureauc-

racies. But even if one were to overcome such qualms, the question would remain: does dropping out of high school somehow diminish a young man's capacity for adapting to bureaucracy, or is his inability to adapt part of the reason that he drops out?

The question is another variation on the same basic theme—is dropping out a major *cause* of problems, or is it a prominent *symptom* of problems? If you have only correlational data—and that is all that your report includes—then it is terribly difficult to make the distinction with any degree of certainty.

Let's consider this question as it applies to a fundamental issue—the need to make adjustments for "ability" in looking at the effects of schooling on income. You point out that studies of the ability-education-income relationship have been far from uniform in their findings, and then you note that this is not surprising given the variations in sample populations and measures of ability. Certainly it is the case that the more limited the measures of ability, the less would be their ability to "explain away" the relationship between dropping out and poor earnings (or unemployment). Presumably, then, the better studies are likely to be those which produce the larger reductions in the apparent relationship between schooling and income, but even those better studies are likely to underestimate the "true" reduction due to that diverse set of things which you call "ability"—simply because of the imperfections in our measures. Given this line of reasoning, if I were faced with a range of reductions from zero to one third (as you mention on page 21), I would assume that the true reduction must be somewhat higher, certainly not the 25 percent which you chose. Your report does not explain just how you hit upon that particular figure; I know one has to take educated guesses, but shouldn't you have guessed a good deal higher?

In fact, I think your "ability adjustments" were several times smaller than they ought to be. And this is really the heart of the explanation of why our studies and conclusions are so different. As you will see when you examine the monograph on dropping out, we found that earnings among employed dropouts were fully as high as those of employed high school graduates (those who went directly into the work force rather than to college). But there were unemployment and underemployment differences between dropouts and graduates. In our analyses of the causes of unemployment (pp. 141–144), we found that much of the difference between dropouts and graduates was attributable to just three measures: vocabulary skill, reading ability, and family socioeconomic level. These analyses are based on a limited number of cases, to be sure; nevertheless, they indicate that almost two-thirds of the variance in unemployment explained by dropping out was attributable to these ability and background characteristics—things which were measured at the start of tenth grade before the dropping out occurred. If we had run an analysis on *earnings*, and had included unemployed individuals as having scores of zero, then this pattern of relationship might have been even stronger (since our measures of background and ability are related to both employment and earnings, whereas dropping out predicts only to the employment dimension).

Perhaps the reason our study has shown stronger background and ability effects than those you cited is because we were able to adminis-

ter several tests of ability and also take some care to develop a fairly comprehensive measure of socioeconomic level. But our measures are certainly far from perfect, and are by no means as accurate as our data on dropping out. What if our measures of background and ability were better, and what if we could accurately measure all those other factors of attitude and motivation and experience which precede the act of dropping out of school? The result could only be that our "ability adjustment" would grow still larger than the two thirds our present findings indicate. Perhaps a proper adjustment would be 75 percent—although a better guess might be 80 percent. As you know, the best one can hope for in such a business is to be in the right range. And my strong conviction is that your 25-percent correction for ability has completely missed that range.

I noted earlier that it is terribly difficult to tease out cause and effect while working only with correlational data. Our own data dealing with employment are limited by that fact. But along many other dimensions our study is truly an analysis of change, with the same personality and behavior scales administered both before and after some of our respondents dropped out of high school. I'll mention just one example now, and hope you will look at some of the rest (Chapter 7 in the dropout monograph). We found that delinquency scores were substantially higher among dropouts than among graduates, especially those graduates who went on to college. But when we looked at scores back at the start of tenth grade, before the dropping out occurred, the same differences were there and just as strong. In other words, delinquent boys are more likely to become dropouts, but there is no evidence in our data to suggest that dropping out makes them more delinquent.

I've surely said enough at this point to give you some idea about how it is that we reached different conclusions than yours. There are many more things which could be said, and perhaps there will be opportunities to do so. In particular, I hope you will accept the invitation to examine our work on dropouts and send me your reactions. Meanwhile, I think it would be useful to share this correspondence with members of the Select Committee on Equal Educational Opportunity.

I am left with one miscellaneous question that obviously goes beyond the range of your report, but I'd be very much interested in your answer. You refer several times (e.g. pages 13 and 25) to a "national policy providing a minimum of high school completion."

How would it work? Would it be compulsory? And what would be the social (as well as financial) cost of implementation? I don't suppose you've got all that neatly worked out any more than I have worked through all the possible implications of our dropout book, but I would be interested in your thoughts on the matter.

Thanks again for sending me your clear and interesting—indeed, provocative—report. Thanks also for bearing with me through this lengthy letter. And thanks in advance for your reactions.

Sincerely yours,

JERALD G. BACHMAN, *Senior Study Director.*

AUGUST 7, 1972.

DR. JERALD G. BACHMAN,
Survey Research Center, University of Michigan,
Ann Arbor, Mich.

DEAR DR. BACHMAN: Thank you very much for taking the time to send me such a full response to my request for information on your study. I am sorry to have taken so long to answer you, but the Summer quarter finds me off-duty and away from campus.

I read carefully your analysis of dropouts with special emphasis on Chapter 8 of your book on the subject. With all due respect to the generally high caliber of your effort, your conclusion that the dropout does not suffer negative economic consequences is *disproven by your own data.*

There exist two biases in your analysis with respect to their validity in assessing the relative incomes that high school dropouts and graduates will receive. First, you did not adjust your earnings data for differences in employment, so that the salaries that you report are representative only for employed graduates and dropouts and not for high school graduates and dropouts generally. Since the graduates showed substantially higher employment than the dropouts, the average income received by graduates exceeds that of dropouts by about 13 percent at age 19 among your sample. Second, the difference in incomes at age 19 will underestimate severely the differences in lifetime income, since the differential widens over the lifetimes of the two groups of workers. Minimum wage legislation, uniform wage agreements for positions of entry into many industries, and the fact that the more highly educated individual is more likely to sacrifice income at the beginning of his career by obtaining apprenticeships and on-the-job training lead to very modest differences in salaries between high school dropouts and graduates at the start of their careers. But, over time, the training programs pay off and the graduates are more likely to improve occupational attainments and earnings, a fact that is reflected in all studies that have attempted to look at age-earnings profiles.

The amount that an individual will earn during any period will depend not only upon his wage rate, but also on the probability of his being employed. Two individuals with identical wage rates or salaries will show very different incomes if they experience very different employment levels. In calculating the salaries of dropouts vs. graduates, you did not take account of the substantially poorer employment picture for dropouts; thus, you compared the salaries of only the employed individuals. That is, you found that among your sample of 19 year olds the *employed* dropouts were receiving about $119 a week while *employed* graduates were receiving $112 a week. But your data also show that while 87 percent of the graduates were employed, only 71

82-025—72——6

percent of the dropouts were employed. After adjusting for this difference in the probability of employment it appears that the average dropout in your sample could expect an income of only $84.49 a week, in comparison to the average income of $97.44 a week that could be expected by the average high school graduate in your sample. That is, even at age 19 the high school graduate in your sample could expect to receive about *$650.00 a year, or about thirteen percent more than the average dropout.*

Yet, for the reasons that were specified above, these differences in earnings at age 19 understate severely the lifetime advantage in income that the graduate holds over the dropout, for as census data show, the magnitude of the difference rises over the life-cycle. In the most extensive analysis of the education-earnings relation based upon data from the 1960 Census, Giora Hanoch found that the difference in annual earnings between high school graduates and those with 9–11 years of schooling was about $360 for men who were 14–24 years old (about 20 on the average) and about $860 for men who were 45–54 years old among whites in the North. For whites in the South, Hanoch found that the differential increased over the same age range from $317 to $1440. These estimates were derived from equations which used the wealth of information provided by the Census to control statistically for differences in socioeconomic factors as well as other influences. I would expect that if you were to do an analysis over a larger number of years, you would also find an increasing dissatisfaction among dropouts with regard to their jobs and a higher perceived relevance of high school as they suffered through the experience of being passed over for job advancement and ineligible for further formal schooling. Their frustration probably increases over their life-cycle.

It is interesting to note that the Department of Labor sponsored a longitudinal study of youth at about the same time that you collected your data. (Andrew Kohen and Herbert Parnes, *Career Thresholds: A Longitudinal Study of the Educational and Labor Market Experience of Young Male Youth.*) As in your study, extensive measures of socioeconomic status and a measure of mental ability were included in the survey and analysis. As you note in your report, Kohen and Parnes found that graduates had hourly earnings about seven percent higher than the dropouts, even though the dropouts had greater seniority in the labor force by having left school at an earlier age. That is, even without considering employment differences between the two groups, the graduates had an edge in hourly earnings. In a paper presented at the 1971 Meetings of the American Educational Research Association, Kohen reported the results of a sophisticated system of recursive equations that was applied to the data. He concluded:

> By far the strongest direct determinant of early labor market success among young men is the number of years of school completed.

It was a consistently more powerful variable in explaining labor market success than mental ability or socioeconomic status among a sample of young men who appear to be comparable to those that you used in your study.

You suggest in your letter and in your study that differences in employment (and ultimately earnings) between high school gradautes and dropouts are due primarily to differences in mental ability and socioeconomic background. I assumed in my estimates that about 25 percent of the difference in lifetime earnings was due to these factors. Based upon the Kohen and Parnes results and those of half a dozen other studies that I cited in my report, I must reject your assertion. In order for you to test the effect of socioeconomic status and ability on labor market outcomes, you would have to construct a fairly sophisticated model that would take account of all of the variables and their interrelationships. These linkages cannot be tested by *post hoc* partitioning of variances limited to a few variables since such an analysis cannot possibly estimate the structure of the casual model that you have in mind. When such models have been constructed, they have not found a substantial effect of ability and background on earnings among men at the lower end of the educational spectrum.

Beyond the matter of the returns to graduation, your letter raises a number of important and interesting questions. I feel that you tend to systematically understate the role of the school in allocating students to their ultimate roles in life. For example, your implicit model is one where you posit that test scores at tenth grade have no relationship to previous schooling experience, and previous schooling experience has no relationship to the socioeconomic origins of the child. Yet, studies of the schooling process suggest that whether one compares different schools or explores within a single school, the quality of the schooling environment and the student's experience differs systematically according to the social class of the child. These differences are manifested in terms of the composition of fellow students, school resources, and curriculum, and although the purpose of your study was not to scrutinize carefully the schooling process, your lack of attention to prior schooling of each student prevents your observing the role of schools in "pushing-out" some students while providing more favorable experiences for others. Your major question of whether dropping out is a cause of later problems or a symptom of them can be answered by saying that it is probably both. That is, many of the factors that lead children to do poorly in school also lead them to do poorly in society (since the school reflects society in large measure in its unfairness to persons drawn from "the other side of the tracks"). Your tacit assumption seems to be that schools are neutral about who succeeds and who fails, and mine is that the schools by their very organization are more likely to select the poor for the role of failure than the rich. I believe that the preponderant share of empirical research in this area would support my contention.

Personally, I think that our society puts too much weight on schooling as a requisite to later success. Yet, as I mentioned in my study, for better or for worse, the schooling of an individual is crucial in determining his life chances. That is the name of the game and I can't change it. As long as our society places such a high premium on schooling, we have to be deeply concerned about the status of the 2 out of 5 nonwhites and 1 out of 5 whites who fail to graduate from high school. Obviously, forcing them to remain in what are often hostile environments is not the answer. Nevertheless, if there were a serious commit-

ment to their cause. I believe that we could make schooling attractive and relevant to their needs. Of course, the fact that dropouts are drawn primarily from the lower social strata suggests that such a plan would not normally be supported by the more powerful constituencies of our Nation. Yet, my study suggests that the wealthy pay for inadequate schooling in the form of higher taxes required to support welfare, police, and other government functions as well as in the tax revenues that are sacrificed because of the lower earnings levels and unemployment of persons with insufficient education. The present system imposes costs on the entire society when any individual is undereducated. These costs appear to be greater than the investment required to improve the situation.

You raised many interesting points in both your study and in your letter, and I am indebted to you for them. I hope that we can meet some time to discuss further some of these ideas. I should benefit greatly from such a meeting.

Sincerely,

HENRY M. LEVIN,
Associate Professor.

Excerpts from

YOUTH IN TRANSITION, Vol. III, DROPPING OUT—PROBLEM OR SYMPTOM?

By Jerald G. Bachman, Swayzer Green, Ilona D. Wirtanen

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Chapter 8

EFFECTS OF DROPPING OUT: OCCUPATIONAL ATTAINMENTS

In the last chapter we presented evidence that dropping out of high school has little or no measurable effect on dimensions of personality and behavior. To put it another way, it does not appear that dropping out causes (further) loss of self-esteem, heightens delinquency, corrupts values, or otherwise leads to undesirable changes in young men.

But there is another powerful argument used in the campaign to prevent dropping out—the economic argument. Dropouts are less likely to find jobs, we are told; and the work they do find will offer poor pay, low status, and unpleasant working conditions. This argument usually places little emphasis on what is actually taught and learned during the final years of high school, but focuses instead on the high school diploma as a necessary *credential*.

In this chapter we will examine some evidence bearing on the economic argument against dropping out. We will begin by examining rates of employment and unemployment for dropouts versus high school graduates. Then we will compare weekly incomes and occupational status. Finally, we will examine levels of job satisfaction and a number of job characteristics.

Our intention is not to provide accurate descriptions of "the average dropout" or "the average high school graduate" in terms of employment experiences; limitations in sample size and response rates rule out such descriptions.[1] Instead, our purpose is to provide a fairly clear comparison and contrast of dropouts and graduates, in order to get some indication of whether the high school diploma really does matter in the world of work. For that reason we will be somewhat selective in

[1] Such descriptions of the average dropout and graduate are reported periodically by the Bureau of Labor Statistics, based on data provided by the Census Bureau's Current Population Survey. See Young (1971) and Hayghe (1970) for recent reports.

defining analysis groups. Rather than covering the full range of experiences of dropouts and graduates, we will concentrate on the world of civilian employment. In addition, we will focus on full-time (or nearly full-time) employment, and set some upper and lower limits on weekly income levels. These and other restrictions, described in the following sections, serve to exclude some "special cases" which might prove interesting as case studies, but would tend to blur and distort our comparison of dropouts and graduates.

Analysis Groups

The final data collection in the Youth in Transition project took place in June and July of 1970. During the six-month period prior to that data collection, many of our respondents were primarily students in colleges and universities and technical schools, some were in military service, quite a number were employed in various occupations, and a few were unemployed. An additional handful of respondents spent the first months of 1970 in high school; some had "fallen behind" in their progress toward graduation, others had dropped out and later returned to school.

By the early summer of 1970, many of those who had spent the preceding winter as students had found jobs. Most had taken summer jobs, but some (such as those newly graduated from high school or a one-year technical program) were in brand-new "permanent" jobs. In conducting a comparison of the employment experiences of dropouts versus high school graduates, we felt it would be confusing to include those individuals who had just left the role of student and were in the first weeks of a new job or still looking for one. Accordingly, we have limited our analyses in this chapter to those Time 4 respondents who were *not* primarily students in the first months of 1970. This means that we will not be considering the large group of respondents in post-high school education (Analysis Group 3), nor will we be looking at those few who were still working toward their high school diplomas in 1970.

High School Graduates Versus Dropouts Without Diplomas

In Chapter 2 we identified two dropout groups, those who dropped out of or interrupted the usual school program but later attained high school diplomas (Subgroup 1a) and those who, at the time of the data collection in 1970, had not received diplomas (Subgroup 1b). In Chapters 3 through 7 we treated both dropout subgroups together, on the grounds that they had much in common that set them apart from other respondents. In the present chapter, however, the presence or absence of a high school diploma is of central importance; therefore, it is no longer appropriate to combine the two dropout subgroups. At the same time, we do not feel comfortable about combining the small group of "dropouts with diplomas" with the much larger group who completed high school in the usual manner. Instead, we will simply limit our analysis in this chapter to the two groups which present the clearest contrast—those who completed high school "on schedule" but did not continue their education beyond that point (Analysis Group 2) and those who dropped out and did not (as of mid-1970) have di-

plomas (Analysis Subgroup 1b). (The "dropouts with diplomas"—Analysis Subgroup 1a—are discussed in Appendix D.)

CIVILIAN WORK FORCE

With only a handful of exceptions, those Time 4 participants who were not primarily students during the first half of 1970 could be classified into one of three categories: those in military service, those in civilian jobs, and those who were unemployed (including those who were waiting to start new jobs and those who had been "laid off" from earlier jobs). Military service differs from the civilian employment market in many ways, particularly where questions of employment versus unemployment are concerned. Accordingly, we will limit our consideration of employment to those respondents in the civilian work force.

SAMPLE LIMITATIONS: SOME WORDS OF CAUTION

At this point in our analysis we are dealing with only those respondents who participated in the final data collection. In earlier chapters we found that dropouts who continued their participation in the study were quite similar in initial characteristics to other dropouts who did not continue in the data collections (but who were identified by themselves or relatives or school records as being dropouts). We found the same kind of similarity in other analysis groups, and concluded that "within each analysis category there is little difference in background and ability between those who continued their participation through Time 4 and those who did not" (Chapter 2). And in Chapter 7 we saw that the personality and behavior scores at early data collections were also, within each analysis category, similar for those who continued their participation in the study and those who did not.

The findings summarized above suggest that we are in a fairly good position to make generalizations based on the Time 4 participants; but now we must add a note of caution. In the present chapter we are looking at dimensions that may be systematically related to a respondent's opportunity to continue participation in data collections. For example, we may underrepresent those young men who moved to geographically different areas in order to find employment. Thus, we do *not* assume that our Time 4 data constitute a bias-free sampling of the employment experiences of young men a year (or more) out of high school.

A second, but related, caution has to do with our ability to draw conclusions about causation. We found in Chapter 7 that dropouts were different from stayins (and particularly college entrants) along a number of dimensions, but that most of these differences were every bit as evident at the start of tenth grade as later on after the dropping out occurred. We thus felt confident in concluding that dropping out was a *symptom* rather than the *cause* of these differences, since the differences preceded the dropping out. This sort of analysis is not possible in the area of employment experience, since post-high school employment could not be measured for most respondents until the Time 4 data collection. Thus if we find different employment experiences for dropouts versus high school graduates, we will still have to decide whether the differences were caused by dropping out and the lack of a

diploma, or by those more basic factors which led to dropping out. Of course, to the degree that we have measured the factors that give rise to dropping out, we will be able to control them statistically. But as Chapter 6 indicated, we can do only a modest job when it comes to predicting dropping out—especially when we limit our consideration to those not going on to post-high school education. So the problem remains with us to a large extent, and we may have to resort to some judgments or educated guesses about any employment-related differences we find between dropouts and stayins.

Rates of Employment

Any definition of "employment" requires that a somewhat arbitrary dividing line be drawn. There is no problem in deciding that someone working 40 hours per week is employed—and fully employed by current standards. But how should we classify a young man who is not a student and who works only 10 hours a week in a grocery store? Is he similar to the youth who is working full-time, or is his experience closer to that of the entirely unemployed?

We decided for purposes of this chapter to consider a respondent fully employed if he reported working 30 or more hours per week at the time he was interviewed (June or July of 1970). We chose this particular boundary for two reasons: first, we consider 30 hours to be fairly close to the typical 40-hour work week; and second, we found that only a few respondents reported working less than 30 hours per week.

More graduates fully employed

A total of 87 dropouts without diplomas and 434 high school graduates remained among the Time 4 respondents after the several restrictions outlined in the preceding section (i.e., when we limited our consideration to the non-student civilian work force, and when we omitted the small number of "dropouts with diplomas"). Among the dropouts, a total of 71 percent were employed 30 hours or more per week. Among the high school graduates, the comparable figure was 87 percent. (An additional 5 percent of both dropouts and graduates were employed for less than 30 hours per week.) In short, employment was substantially lower among dropouts.[2]

[2] These figures are roughly consistent with data reported by the Bureau of Labor Statistics for civilian noninstitutional males aged 18 and 19. In October of 1969, about 84 percent of the high school graduates not enrolled in college were employed, while the comparable figure for dropouts was about 75 percent (based on Hayghe, 1970, p. 38). In October of 1970, the occupational situation had grown more bleak; again considering males aged 18 and 19, about 80 percent of high school graduates not enrolled in college were employed, while for dropouts the figure was about 65 percent (based on Young, 1971, p. 34). It should be noted that in both reports cited above two distinct classifications are applied to those not employed: the term "unemployed" is reserved for those not working who are looking for work, whereas those neither employed nor actively looking for work are defined as not being members of the civilian labor force. Dropouts are consistently higher in both categories of nonemployment, that is, a relatively high percentage of dropouts are considered outside of the civilian labor force, and of those included in the labor force a relatively high percentage are classified as "unemployed." In the present study we have not found it useful to distinguish between the two categories of nonemployed young men; accordingly, our use of the term "unemployed" will apply to all those not working irrespective of whether they are actively seeking work.

This finding required us to deal with the question of causation raised earlier: we wanted to learn whether the lower employment rate among dropouts was a direct result of their dropping out, or a result of prior conditions—perhaps the same ones which led them to drop out of school.

A first step in answering this question involved predicting employment using the background, ability, personality, and behavior dimensions which we earlier used to predict dropping out. Preliminary analyses of the 14 dimensions summarized in Chapter 6 indicated that our most "efficient" prediction would involve just three predictor dimensions: socioeconomic level, the GATB-J test of vocabulary, and the Gates test of reading skill.[3] A Multiple Classification Analysis using these three variables to predict full employment yielded a multiple correlation coefficient of .22, with R-squared equal to .049, adjusted for degrees of freedom. This means that we can account for 4.9 percent of the variance in employment when we take account of socioeconomic level and test scores.

How well do we predict employment simply by knowing whether a young man is a dropout or a high school graduate? The value of Eta for this relationship is .19, and Eta-squared is .037, indicating that we can account for 3.7 percent of the variance in employment by distinguishing dropouts from graduates.

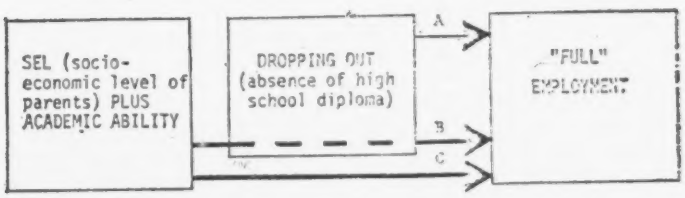
The next step required a Multiple Classification Analysis combining the dropout-graduate variable with socioeconomic level and test scores as predictors of employment. The resulting multiple correlation coefficient is .250, with R-squared equal to .063. In other words, by using dropout data plus family background and ability, we were able to account for 6.3 percent of the variance in employment, and this level of prediction is a bit better than we are able to do when using dropout data alone, or background and ability data alone.

Now let us consider the relationship between background and ability, dropping out, and employment using the intervening variable model introduced in Chapters 3 and 4. The upper part of Figure 8–1 presents the relationship schematically. The lower portion of the figure indicates how the explained variance is assigned. It must be stressed that *we present these figures primarily for their heuristic value*, not because we feel that they fully represent the actual relationships between background, ability, dropping out, and employment. The model in Figure 8–1 indicates that some of the effects of family background and ability are unique or independent of whether a young man drops out (Arrow C), and some effects of background and ability overlap with dropping out (Arrow B). The unique contribution of dropping out, the portion which does not overlap with family background and ability measures, is somewhat smaller than the other effects (Arrow A).

[3] The use of just three predictors was "efficient" in the sense that using more than three predictors did not add enough new information to offset the additional "noise" or loss of degrees of freedom which resulted from having more predictor categories.

FIGURE 8-1

MODEL ILLUSTRATING THE EFFECTS OF FAMILY SOCIOECONOMIC LEVEL, ACADEMIC ABILITY, AND DROPPING OUT UPON EMPLOYMENT



NOTE: This analysis deals with very small relationships. The figures are presented primarily for their heuristic value.

Arrow A: Effects of dropping out that are independent of SEL plus academic ability

Arrow B: Joint or "overlapping" effects of SEL plus academic ability and dropping out, which we interpret as the effects of SEL plus academic ability operating through dropping out as an intervening variable

Arrow C: Effects of SEL plus academic ability that are independent of dropping out

Arrows A+B: Total effects of dropping out

Arrows B+C: Total effects of SEL plus academic ability

Arrows A+B+C: Total effects of SEL plus academic ability and dropping out

Given the data presented in the text, we can fill in the model as follows:

A+B+C = 6.3% of variance in "full" employment (adjusted for degrees of freedom)

A+B = 3.9%

B+C = 4.9%

Therefore:

A = 1.4%

B = 2.5%

C = 2.4%

We conclude from this analysis that dropping out may contribute to unemployment, but it makes a smaller contribution than family background and ability. Even this conclusion may overrepresent the importance of dropping out as a cause of unemployment, for there is an inequality between our ability to measure dropping out and our ability to measure accurately and completely the *causes* of dropping out. We can do a rather good job of measuring whether a young man has dropped out or graduated—especially when we simply exclude from analysis those whom we cannot fit clearly into one or the other

category. But our measures of socioeconomic level are far from perfect, and our brief tests of vocabulary and reading skill leave much to be desired. If our measures of background and ability were as accurate as our distinctions between dropouts and graduates, we might expect background and ability to be much more impressive as predictors, and we might find still less unique prediction from dropping out to unemployment. Yet even if we had perfect measures of socioeconomic level and flawless tests of vocabulary and reading skill, there remain other causes of dropping out, some of which we did not even attempt to measure. Just as family background and ability relate to both dropping out and unemployment, so may these other causes of dropping out also contribute to unemployment.

In sum, we conclude that dropping out probably makes it more difficult to obtain employment; however, the more important causes of unemployment are those pervasive differences in background and ability which precede and help determine the act of dropping out. To put it another way, dropping out may *contribute* to unemployment, but it is also a conveniently-measured *symptom* of more basic causes of unemployment.

Income and Status

According to the anti-dropout commercials, dropouts earn less than high school graduates. In this section we check this assumption for dropouts and graduates working 30 or more hours per week in civilian jobs.

WEEKLY INCOME

A total of 62 dropouts and 379 graduates in our sample were working 30 or more hours per week at the time when they were interviewed. The mean of weekly incomes reported by all dropouts was $136, while that for all graduates was $119. An examination of frequency distributions for dropouts and graduates revealed that some of the apparent difference between the two groups was due to a few respondents reporting very high (or low) incomes.[4] When the analysis was limited to 54 dropouts and 351 graduates who reported incomes between $50 and $199 per week, the mean for dropouts was $119 and that for graduates was $112.

This finding of slightly higher incomes for dropouts corresponds very closely to Project TALENT data indicating that annual salaries for dropouts averaged about 4 percent higher than those of graduates who did not continue their education after leaving high school. The TALENT authors suggested that the difference was due to greater seniority for the dropouts—they had simply been working longer than the graduates (Combs and Cooley, 1968). We examined this possible explanation for our own findings by looking at mean dropout and graduate earnings for those who started their jobs prior to 1969, during 1969, or during 1970. A total of six different time periods was considered, as shown in Table 8–1.

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[4] There is reason to question some of the very high weekly incomes reported by a few respondents; they may have resulted from a misunderstanding of the interview question.

TABLE 8–1.—*Mean dropout and graduate earnings classified by length of time on the job*

[Main entires are weekly earnings at time of interview; parenthetical entries are unweighted N's]

	Date when respondent started job					
	1968 and earlier	January through April 1969	May through August 1969	September through December 1969	January through April 1970	May 1970 and later
Dropouts	$130 (9)	$131 (5)	$145 (6)	$113 (12)	$99 (14)	$125 (8)
Graduates	$116 (23)	$125 (8)	$114 (92)	$113 (72)	$114 (94)	$103 (57)

The data in Table 8–1 indicate that among those who had held their jobs less than a year (since September, 1969), there was no consistent difference in weekly earnings between dropouts and graduates. For those who had held their jobs longer, dropouts had slightly higher weekly incomes on the average.

Another possible explanation for the slightly higher dropout earnings involves the number of hours worked per week—dropouts might gravitate toward the kind of jobs that involve overtime work, especially during the summer months, and this could have caused the difference in weekly earnings between dropouts and graduates. An examination of the interview data ruled out this hypothesis; there were virtually no differences between dropouts and graduates in numbers of hours worked per week.

There is a danger that the above analyses of weekly income will be misinterpreted. The average pay difference between dropouts and graduates is not at all large; indeed, it is not large enough to be considered statistically significant.[5] The real point of this analysis is that *dropout incomes in our sample were not found to be lower than the incomes of high school graduates.* And this is, of course, not at all consistent with the anti-dropout commercials.

OCCUPATIONAL STATUS

The Duncan status coding for the occupations of dropouts and graduates produced little evidence of differences between the two groups, but what differences there were appeared to favor the graduates. Looking at all fully-employed respondents, the mean Duncan status code for dropouts was 22.3 and that for graduates was 24.9; when the analysis was restricted to those reporting weekly incomes between $50 and $199, the mean for dropouts was 21.5 and that for graduates was 25.6.

[5] A recent report based on a longitudinal study by Parnes and his colleagues at Ohio State University found a slight difference in the opposite direction: dropout earnings averaged $2.98 per hour in 1968 while noncollege high school graduates averaged $3.18 (Kohen and Parnes, 1971, p. 75).

This status difference, like the difference in income levels between dropouts and graduates, is not large enough to be statistically trustworthy; nevertheless, it is interesting, partly because it runs in the opposite direction from the difference in income. It begins to appear that the dropouts in our sample were employed in slightly lower status occupations, but ones which paid fairly well. Now let us consider how satisfied they were with their jobs.

Job Characteristics and Job Satisfaction

Early in the interview segment dealing with current jobs, the respondents were asked a general question concerning job satisfaction. Table 8–2 summarizes the question, the response scale, and the answers given by dropouts and graduates. Over two-thirds of both dropouts and graduates said that they were "quite satisfied" or "very satisfied" with their work experience on their present job. The differences between the two distributions are not large enough to meet criteria of statistical significance; the small differences which do appear are in the direction of greater satisfaction among dropouts.

Table 8–2.—*General rating of job satisfaction*

[In percent]

	Dropouts	Graduates
All things considered, how satisfied are you with your work experience on your present job:		
Very satisfied	40	35
Quite satisfied	37	33
Somewhat satisfied	16	17
Not very satisfied	4	10
Not at all satisfied	1	4
Missing data	(2)	(0)
Total	100	100

A fairly large number of items in the paper-and-pencil questionnaire dealt with specific characteristics of jobs. On the whole, the responses to these items were not very different for dropouts versus graduates. Some of the items dealing with job characteristics are presented in Table 8–3. Some of the response distributions are of interest even when they show no difference at all between dropouts and graduates. Other items do show some differences that are worth noting. But we must add that any differences in this section must be viewed as suggestive rather than conclusive; given the limits of sample size in this phase of analysis, we cannot claim that distinctions between dropouts and graduates are statistically trustworthy.

Both dropouts and graduates viewed their jobs as steady (item 2 in Table 8–3) and as providing good pay (item 9). On the other hand, neither tended to describe their jobs as being clean (item 5) or as having a lot of "class" in the eyes of their friends (item 10). The dropouts were a bit more likely than the graduates to view their jobs as providing good opportunities for learning (items 3 and 13), skill

utilization (item 11), and advancement (item 6); but the dropouts were also more likely to say that their jobs did not require them to "take a lot of responsibility" (item 7) or "work too hard" (item 4). Both groups rated their jobs high in terms of having "nice friendly people to work with," but the graduates averaged higher on this dimension than the dropouts.

TABLE 8–3.—*Rating of Job Characteristics: Dropouts Compared with Graduates*

	How true is this for your present job?				
	Very true	Pretty true	A little true	Not at all true	Missing data
1. There's no one to boss me on the work	18	25	29	22	5
	9	21	26	38	36
2. It is steady, no chance of being laid off	40	32	16	8	6
	38	32	16	8	6
3. I can learn new things, learn new skills	34	33	16	9	8
	31	25	29	9	6
4. I don't have to work too hard	15	45	25	11	5
	12	37	32	14	6
5. It is a clean job, where I don't get dirty	16	17	33	29	5
	12	15	29	37	6
6. It has good chances for getting ahead	30	32	25	8	5
	28	25	26	16	6
7. I don't have to take a lot of responsibility	17	22	32	22	7
	7	28	37	23	6
8. It leaves me a lot of free time to do what I want to do	9	36	26	24	5
	6	26	38	24	6
9. The pay is good	32	38	17	8	5
	22	35	24	14	6
10. It is a job that my friends think a lot of—has class	5	21	46	22	5
	7	19	36	33	6
11. It uses my skill and abilities—lets me do the things I can do best	18	37	25	15	5
	18	23	30	23	6
12. There are nice friendly people to work with	28	47	15	5	5
	12	27	28	27	6
13. It doesn't make me learn a lot of new things	13	11	41	30	5
	12	27	28	27	6

Note: Table entries are percentages. Top row of each set presents data for dropouts; bottom row of each set presents data for graduates.

In sum, the picture presented in Table 8–3 is somewhat mixed. The differences in job ratings between dropouts and graduates were not large, nor did they consistently show one group to be more satisfied

than the other. Once again, if we had to judge one group as showing slightly greater job satisfaction than the other, we would select the dropouts. The clearer and more important conclusion, however, is that *dropouts in our sample do not show lower job satisfaction than graduates.*

PERCEIVED RELEVANCE OF HIGH SCHOOL TRAINING TO JOB SUCCESS

Part of the popular argument against dropping out is that what one learns in high school will be helpful in the world of work after high school. A few of the questions about job characteristics dealt with this issue as perceived by the respondents, and they are summarized in Table 8–4. As the results in the table indicate, the dropouts gave rather little credit to the high school for helping them do well on their jobs; only 7 percent said they had gotten any help at all from people in school in getting their jobs, and 45 percent claimed they could do their job just as well without any high school education. Perhaps this sort of response is to be expected from dropouts, on the grounds that they would be motivated to rationalize or try to avoid what Festinger (1957) has termed "cognitive dissonance." But the same argument of avoiding cognitive dissonance would suggest that *graduates* should rate their school experience as important in contributing to their job success. In fact, however, the responses of graduates were not very different from those of the dropouts. Only 13 percent reported help from school in getting their jobs, and 29 percent indicated that high school education was irrelevant for their job performance. Apparently a good many young graduates, as well as dropouts, found themselves in jobs which they considered unrelated to things that are learned in high school.

TABLE 8–4.—*Perceived relevance of high school to success in present job*

	Percentage frequencies	
	Dropouts	Graduates
What I have learned in high school helps me to do a better job:		
Very true	13	16
Somewhat true	41	48
Not at all true	41	30
Missing data	5	6
I could do my present job just as well without any high school education:		
Very true	45	29
Somewhat true	28	35
Not at all true	21	29
Missing data	6	7
Did anyone in the high school you attended help you to get your present job?		
No	84	81
Yes, I got a little help from people at school	7	10
Yes, I got a lot of help from people at school	0	3
Missing data	9	6

Summary and Evaluation

Most of the dimensions we have examined in this chapter failed to show statistically significant differences between dropouts and graduates. Ordinarily we tend to view the lack of significant differences between groups as a rather disappointing finding in research, but this is not an ordinary situation. It was expected that employed dropouts would earn less than graduates and be less satisfied with their jobs; but this is not what we found. The small differences which did appear along these dimensions tended to be in favor of the dropouts as often as not. So we are left with the conclusion that dropouts seemed just about as happy and well-off in their jobs as high school graduates without further training.

But the other finding in this chapter is that unemployment was higher among dropouts than graduates, and this certainly is consistent with one part of the economic argument against dropping out. However, when we ask whether the higher rates of unemployment result directly from dropping out and the lack of a diploma, the issue becomes more complicated. We found that test scores and family socioeconomic level were a bit more important than the high school diploma as predictors of unemployment; and low test scores and disadvantaged family backgrounds were among the important factors leading to dropping out. Thus is seems likely that much of the unemployment difference between dropouts and graduates was due to these earlier and more pervasive differences; those things which caused some young men to drop out of school also made it difficult for them to get and hold jobs. But it seems likely that dropping out and the lack of a diploma added to these difficulties, particularly given the nationwide campaign to discourage dropping out and to urge dropouts to return to school.

We noted earlier the Project TALENT finding reported by Combs and Cooley (1968) that dropouts in their sample earned slightly more than non-college high school graduates, a finding very similar to our own. But the Project TALENT results in the area of unemployment do not match ours:

> In 1964, the employment rates of dropouts and controls were quite similar. Ninety percent of the dropouts who did not continue their education after leaving high school were employed, 87 percent full-time, three percent part-time. Of the controls with no further training, 89 percent had full-time jobs and two percent part-time. (Combs and Cooley, 1968, p. 352)

How do we account for this difference in the results of two nationwide studies of dropouts? First, we must note that there are surely differences between the employment market for young men in 1964 and that in 1970. In addition, there are differences in research design and procedures between Project TALENT and Youth in Transition. Perhaps there are sufficient reasons for the difference in findings. Yet still another difference is worth noting: between the start and the end of the 1960's we have seen an increasingly vigorous campaign against dropping out. Perhaps the differences between the TALENT findings and our own data on dropout unemployment reflect, at least to some degree, a measure of the "success" of that campaign as a self-fulfilling prophecy.

In concluding their dropout article based on the Project TALENT data, Combs and Cooley made the following observations:

> One of the reasons for undertaking this dropout investigation was to try to develop data about dropouts for use in high-school guidance. It was hoped that the results would reveal that the noncollege high school graduate (the control) was much better off than the high school dropout as far as future employment and earnings are concerned. Large differences in this area might help to dissuade some students from leaving high school before graduation. Although there are other cultural advantages in continued education, such practical data would probably have a more direct impact on potential dropouts.
>
> Unfortunately, the results were not consistent with these expectations. Not only were the male dropouts earning as much as the controls, but they had been earning it longer. Thus, economically, the dropout was certainly at an advantage over the student who stayed to graduate. Of course, it must be remembered that when the follow-up data were collected, the dropouts were only about 19 years old. Many of the consequences of leaving high school prior to graduation may not become apparent until later life. (1968, pp. 361–362)

On the whole, our findings are like the TALENT results in suggesting that the economic disadvantages of dropping out may not be so severe after all. Of course, our data are also based on young men about 19 years old: thus the above qualification about possible later consequences of dropping out must be applied to the findings presented in this chapter.

It was *hoped* that the TALENT findings would provide solid data to support the campaign against dropping out. But the results did not work out that way, as the authors clearly acknowledged. The campaign has gone on, nevertheless, and with a good deal of success. As we shall see in the next chapter, many dropouts have been persuaded by the economic argument and have reached the conclusion that they made a great mistake in leaving high school. It is ironic that most of our findings, like those from Project TALENT, fail to support that conclusion.

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Chapter 10

DROPPING OUT IS A SYMPTOM: SUMMARY, CONCLUSIONS, IMPLICATIONS

Dropping out of high school is overrated as a *problem* in its own right—it is far more appropriately viewed as the end result or *symptom* of other problems which have their origin much earlier in life. The difficulties experienced by the dropouts we studied—the low aspirations and accomplishments, and even the limitations in self-esteem and self-concept—were already present or predictable by the start of tenth grade, and there is little evidence that dropping out made matters worse.

A related conclusion is that educational attainment is a continuum, with high school dropouts at one end of the scale and college entrants at the other end. "Dropout statistics" can be terribly misleading if they simply contrast dropouts with all those having a high school diploma. Along most of the dimensions we have examined, the largest distinctions are associated with college entrance rather than high school graduation.

The statements above were not views which guided this research effort from the start; rather, they represent our conclusions based on the evidence presented in considerable detail in earlier chapters. In this final chapter we review and discuss that evidence briefly, and consider some implications. Our style here is less technical than in earlier chapters, and perhaps somewhat more argumentative, for our findings lead us to advocate substantial changes in attitudes and policies toward "the dropout problem."[1]

How Solid Is Our Evidence?

Our conclusion that dropping out is primarily a symptom rather than a basic problem may be surprising and perhaps also disconcerting. Certainly it runs counter to the conclusions of some (but not all) other researchers, as well as the "anti-dropout campaign" being waged on radio and television. Thus it seems appropriate that we look back over the research design which led us to this view, and ask whether our evidence really is solid.

THE "BEFORE-AND AFTER" TYPE OF RESEARCH DESIGN

The Youth in Transition study was designed specifically to measure changes over time—especially changes that result from dropping out

[1] Those wishing a step-by-step summary of our analyses and findings may wish also to review the summaries at the ends of the chapters.

of high school. In order to assess such changes, it is necessary to follow a group of respondents for some extended period and collect the same kinds of data from them at several points in time. In our case, the respondents were a nationally representative sample of young men; they completed literally scores of interview items and questionnaire scales at each of four data collections spaced over a period of nearly four years.

This type of design is conceptually simple and straightforward, and uniquely well suited to the job of distinguishing causes from effects. Unfortunately, it is also time-consuming, expensive, difficult to administer, and thus quite rare.

The more typical source of dropout data is the "after-only" design in which those who have already dropped out are compared with those who remained in school. In some instances the stayins are "matched" to the dropouts in terms of family socioeconomic level, test scores, and other characteristics. Nevertheless, we can be sure that the groups were far from perfectly matched—some prior differences existed which led certain individuals to drop out while others remained in school. This leaves us forever in doubt about the results of an "after-only" study, because what might appear to be *results* of dropping out could actually be among the *causes*.

Our own findings, like the typical "after-only" study, found that dropouts were different in some respects from stayins—especially those who entered college. For example, the average level of delinquency reported by dropouts was much higher than that for stayins. But which came first, the dropping out or the high level of delinquency?

Because ours was a "before-and-after" design, we were able to show that in nearly every case a difference which turned up at the end of the study was present and equally strong at the start—before the dropping out occurred. Again taking delinquency as our example, we found that dropouts were above average in delinquency throughout the entire study, and there is no indication that this delinquency increased as a result of dropping out.

Dropping Out Is a Symptom of Other Problems

What are the underlying problems signified by dropping out? Stated in most general terms, the problems involve a serious mismatch between some individuals and the typical high school environment. More specifically, dropping out is symptomatic of certain background and ability characteristics, school experiences, and traits of personality and behavior. Let us review some of these dimensions.

FAMILY BACKGROUND FACTORS

Most important among family background factors that predict to dropping out is socioeconomic level (SEL); the lower the family SEL, the more likely a boy is to become a dropout. It is worth noting that two of the six ingredients in our composite measure of SEL are father's and mother's education, and a good many parents (about 40 percent) had not finished high school. Thus it appears that if a boy is the son of dropouts, he stands a better than average chance of becoming a dropout himself.

Dropping out is also more frequent among boys from large families and those from broken homes. These relationships are reduced but not eliminated when SEL is controlled statistically.

One other family background characteristic is worth noting in this review. Dropping out occurs more frequently among those boys reporting a high level of parental punitiveness. Since the punitiveness measure was obtained in 10th grade, before the dropping out occurred, it is tempting to argue that parental punitiveness is among the direct causes of dropping out. This may indeed be true, but it is not the only plausible explanation for the relationship. It would be naive to suppose that punitive action by parents is not influenced by the behavior of their children. And some of the behavior patterns which provide the best predictions of dropping out—such things as poor school performance and high levels of delinquency—are the very kinds of behavior likely to produce a punitive reaction from parents. Perhaps it would be best to say that parental punitiveness is part of the mix of forces that precede dropping out, and it may often be both a reaction and a contributing factor.

ABILITY LIMITATIONS

It is no surprise to find that those boys who later became dropouts tended to score below average on the tests of intelligence and academic ability that were administered at the start of the study. What may be surprising is that the differences are really not very large (about the equivalent of five IQ points, on the average) between dropouts and those stayins who did not go on to college. The much larger differences appear between those boys who later went to college and all those who did not.

PAST SCHOOL FAILURE

Two of the most important predicators of dropping out are poor classroom grades and being held back. We estimate the dropout rate to be about 40 percent among those boys who have failed a grade in school, in contrast to 10 percent among those never held back.

Would dropout rates go down if teachers simply refrained from giving low grades or holding back students who are having difficulty? This is a complex issue, and one that cannot be resolved within the limits of our present design. The poor grades and failures may simply be indicators of a more fundamental inability (or unwillingness) to do well in an academic setting; if so, removing those symptoms might do little to change the underlying realities—including dropout rates. On the other hand, there is a large measure of visibility involved in poor grades and especially in being held back; it may be that such events have a tendency to function as self-fulfilling prophecies—with both the student and his teachers coming to feel that "he just isn't cut out for school work." In addition, the failure experiences in school may lead to feelings of shame and eventually precipitate "fight" and/or "fight" reactions—reactions such as rebellious behavior in school and dropping out.

We have merely touched on what is surely a basic issue in educational philosophy—the damage that may be caused by early experiences of failure. Other longitudinal studies, ones that start with young-

sters at the beginning of elementary school or even earlier, might help to resolve such issues.

REBELLIOUS AND DELINQUENT BEHAVIOR

We have already noted that boys who become dropouts are more likely to have a background of delinquency. The study included several measures of rebellious behavior in school, and delinquent behavior both in school and outside of school. The results consistently indicate that the boy who is likely to drop out is above average in rebellious and delinquent behavior. Moreover, this is the one set of dimensions on which the dropouts really stand apart from all other respondents. (Along many other dimensions, the distinction between dropouts and stayins is less important than the distinction between those who do and do not enter college.)

How shall we account for the fact that delinquent boys are much more likely to become dropouts? One rather obvious explanation is that boys who manifest rebellious and delinquent behavior in school are likely to be expelled or be invited to leave "for the good of the school." As some of the anecdotal evidence in Chapter 9 indicates, a number of dropouts could also be called "push-outs." But others leave in the absence of such coercion, and sometimes they leave in spite of pressures from parents and teachers to remain in school. Perhaps for some of these boys, dropping out is itself a form of rebellious or delinquent behavior—just one more instance of doing what authority figures tell them not to do. Whatever the causal dynamics, it is clear that an established pattern of rebellious and delinquent behavior is often a precursor of dropping out.

OTHER DIFFERENCES BETWEEN DROPOUTS AND STAYINS

Are there other "personality" characteristics which distinguish those boys most likely to become high school dropouts? A number of relevant dimensions were examined; the results, while not as strong as some reported above, suggest that the potential dropout is (a) lower than average in self-esteem, needs for self-development, commitment to social values, and feelings of personal efficacy; and (b) higher than average in somatic symptoms and negative affective states. The potential dropout is also lower than average in occupational aspiration.

All of the findings summarized thus far fit the stereotype of the dropout as a "loser"—a young man who is delinquent, low in self-esteem, lacking in ambition, and unable to control his own destiny. But there are two cautions to be kept in mind: First, the dropout was a "loser" long before he dropped out—dropping out is the symptom, not the cause. Second, a number of these differences which appear "on the average" are not really very large; there is a substantial range of overlap between dropouts and stayins—especially those stayins who do not go to college.

Educational Attainment Is a Continuum

Each of the dimensions described above predicts not only dropping out but also college entrance. If those lowest in socioeconomic level and academic ability are most likely to become dropouts, those at the

highest levels are most likely to enter college. A glance at Figure 6-1 will confirm that dropouts are consistently at one end of a scale while college entrants are at the other.

We take this pattern of findings as confirmation of our view that educational attainment is best studied as a continuum. Further support is provided by a series of multivariate analyses reported in Chapter 6. A three-level continuum of educational attainment, with dropouts at one end and college entrants at the other, proved to be more "predictable" as a criterion than any two-way classification of dropouts versus stayins or college versus non-college.

These findings make sense conceptually. As we argued in Chapter 1, those who feel willing to invest their energy in education as a key to later success are not only less likely to be high school dropouts, but also more likely to extend their education beyond high school. Likewise, those who find education intrinsically satisfying are least likely to drop out and most likely to enter college.

In short, there are both conceptual and empirical reasons for treating educational attainment as a continuum. Moreover, it makes a great difference in any study of dropouts whether the comparison or "control" subjects include all stayins, or only those stayins who did not go on to post-high school education. Why should this matter? Because in most respects dropouts are not so very different from those who end their education with high school graduation; it is more often the ones who go on to college who really stand apart. And this relates directly to our current campaign to persuade young men (and young women) to stay in high school.

The basic thrust of the "anti-dropout campaign" seems to be this: Stay in school long enough to get your high school diploma—your chances of "making it" will be much better. But if the really important educational threshold is college entrance rather than high school graduation, then the "stick it out until the end of high school" approach is highly deceptive. One could argue, of course, that graduating from high school is a prerequisite for college entrance, and the "finish high school" message is a necessary first step. In our view that argument misses the point in at least two ways. First, the idea of college usually is not even mentioned in anti-dropout commercials. Yet it would seem foolish to persuade a potential dropout to stick it out just to the end of high school and then fail to tell him that he *really* ought to be gearing up for college. Second, even if potential dropouts were clearly shown that college is the real issue, their limitations in ability, past school performance, and attitudes toward school make them very poor prospects for a successful college experience. There are exceptions to this general pattern, and some high school dropouts later go on to do very well in higher education. But these are indeed the exceptions, and it seems unwise to build our policy around them.

Does Dropping Out Really Change Anything?

We said at the start of this volume that an effort to persuade individuals to stay in (or return to) high school must be based on the proposition that things get worse for individuals who drop out—and that this happens *as a consequence of dropping out*. In Chapters 7 and 8 we presented a good deal of evidence bearing on this issue. Some

findings were clearer and more conclusive than others, but the overall impression to be gained from the data is that dropping out does not change things a great deal—at least not in ways that are apparent by the time a young man reaches the age of 19 or 20.

CHANGES IN PERSONALITY AND BEHAVIOR

In Chapter 7 we examined more than a score of personality and behavior dimensions, measured over a period of nearly four years. We found changes along some dimensions. For example, self-esteem showed some upward trend for all educational subgroups (see Figure 7–1). But the self-esteem increases were actually a bit larger than average among dropouts and those high school graduates who did not enter college—hardly evidence that dropping out has harmful effects on self-esteem. Along a few other dimensions the changes could best be described as a convergence—a blurring of distinctions that were clearer back at the start of tenth grade. For example, along a scale of social values the college entrants showed a slight drop over time, while the non-college groups—both dropouts and stay-ins—showed a very small increase: the college entrants were still a bit higher than the others at the end of the study, but the differences had grown smaller.

We have noted several instances of modest change, but the more fundamental conclusion from Chapter 7 is that there are very few changes of any consequence and virtually none that would support the argument that dropping out damages a young man's "mental health" and his commitment to society's values. This conclusion is based on a wide variety of scales including self-esteem, feelings of personal efficacy (internal control), negative affective states, somatic symptoms, aggressive impulses, needs for self-development and self-utilization, social and academic values, attitudes about government and public issues, delinquent behaviors, and occupational aspirations.

EMPLOYED VERSUS UNEMPLOYED DROPOUTS

An examination of employed versus unemployed dropouts, while based on only a limited number of cases, led to essentially the same sort of conclusion as did our other findings. We found self-esteem lower and delinquent behavior higher among the unemployed dropouts when compared with dropouts who were working. But which is cause and which is effect? Did the unemployment lead to the lower self-esteem and higher delinquency, or is it the case that young men with patterns of delinquent behavior and low self-esteem are less likely to find and keeps jobs? Of course, these two lines of causation are not mutually exclusive, and it could be the case that both are at work in a kind of vicious cycle. But our longitudinal data suggest that this is not the most likely explanation. We found that differences which were evident at the end of the study had been there all along, and were just about as large at the beginning (when all were students in tenth grade) as they were at the end. Thus it seems clear that the low self-esteem and high rates of delinquency came first, and should not be viewed as the unfortunate *results* of dropping out and being unemployed.

ARE THESE MEASURES VALID?

Most of the measures of personality and behavior dimensions showed little systematic change over time. We have taken the view that this indicates a good deal of stability in these characteristics. But an alternative interpretation might be that the measures are simply no good—that they do not show changes because they are not measuring what they are supposed to measure. This argument would be plausible if we had found no relationships at all using our measures. But the fact of the matter is that we did find consistent and theoretically sensible differences beween dropouts and stayins, and between those who did and did not enter college. In our view these differences constitute further evidence for the "construct validity" of our measures, because they show the kinds of differences that would be predicted in advance. It is not that our measures failed to "work"—they simply failed to indicate that dropping out *changes* a boy in any very fundamental way.

Of course, most of our measures were not specifically designed to reflect changes. Although the *research design* was developed to show changes and to separate causes and effects, the *measures* were in most cases ones which had been developed to tap more-or-less stable personality characteristics or behavior patterns. An alternate approach might have been to try to develop measures for the specific purpose of reflecting change, with items selected for their instability rather than their stability. This was not a feasible alternative in the Youth in Transition study; given the wide range of measures included and the limited time and resources available for instrument development and validation, we chose the course of using established measures whenever possible. But even if it had been possible to develop measures of less stable or more changeable personality characteristics, it is not clear that this would have been appropriate for our purposes. After all, one cannot have it both ways. If a major environmental shift such as dropping out of school is supposed to produce real changes in self-esteem and delinquent behavior, and if these changes really do matter in the long run, then such changes ought to manifest themselves in the basic dimensions of personality and behavior, not simply superficial ones. In retrospect, the use of fairly stable measures in the Youth in Transition study seemed appropriate, particularly for this study of dropouts. Once we were able to identify those who dropped out, we found that our measures were successful in revealing many of the differences we had been led to expect; what was less expected was the finding that those differences were relatively stable ones which were evident long before dropping out occurred.

Occupational Attainments of Dropouts

In many ways the heart of the argument against dropping out is that those without a high school diploma are less likely to get jobs, and the jobs they do succeed in getting are relatively unattractive and poorly paid. This economic argument places heaviest stress on the value of the high school diploma as a *credential*—an admission card into the world of work.

Our findings on occupational attainments of dropouts versus high school graduates are presented in Chapter 8, and reviewed briefly be-

low. First a brief note on methodology is in order. We argued earlier in this chapter that a "before-and-after" type of longitudinal design is well suited to measuring change and separating cause from effect. That argument holds true when it is possible to make repeated measures of the same dimension. It was meaningful to measure dimensions such as self-esteem and delinquent behavior at all four data collections in our study, and this enabled us to examine whether dropout/stayin differences were already evident before the dropping out actually occurred. But this form of analysis is not workable when we focus our attention on employment. While some of our respondents held part-time jobs at the start of tenth grade when we first interviewed them, we cannot make a clear comparison between such jobs and later full-time post-high school work. At the second and third data collections some dropouts were holding jobs, but their jobs could not be compared meaningfully with the part-time jobs held by some of the stayins. The only sensible time for comparing employment experiences of dropouts and stayins is after the stayins have completed high school—in our case, the fourth and last data collection. And this means that we have in many respects an "after-only" type of research design when it comes to studying employment experiences. Thus when we find differences between dropouts and stayins, we will still have to ask whether dropping out was truly the cause of the difference, or only another symptom.

RATES OF EMPLOYMENT

Limiting our analysis to those in civilian life, we found that among dropouts without diplomas a total of 71 percent were employed 30 hours or more per week (at the time of the final interview): the comparable figure was 87 percent for high school graduates (i.e., those who were not primarily engaged in post-high school education). This finding would surely appear to justify the anti-dropout commercials which claim that "your chances of being unemployed are doubled if you quit school before graduating."

But let us take a closer look at that claim. The clear implication is that dropping out causes the high rate of unemployment. But when we consider that dropouts achieve relatively low scores on tests of intelligence and intellectual skills, and when we further note that the dropouts come predominantly from lower socioeconomic levels, we must ask: Is dropping out the cause of greater unemployment, or is it primarily a symptom of other more basic factors that cause unemployment. A partial answer to that question can be obtained by considering the extent to which we can predict unemployment using our measures of family background and ability. The results of this analysis indicate that we can do a better job of predicting unemployment using background and ability measures than by using dropout data, but we can make the best predictions if we use both kinds of information. As we stated in Chapter 8, we conclude that dropping out probably makes it more difficult to obtain employment; however, the more important causes of unemployment are those pervasive differences in background and ability which precede and help determine the act of dropping out.

Thus while unemployment rates may be twice as high among dropouts as among stayins, it is very misleading to claim that the act of dropping out will double a young man's chances of being unemployed.

That difference in unemployment rates is caused primarily by family background and ability factors, and these things are not changed when a young man drops out of school.

LEVELS OF INCOME AND JOB SATISFACTION

When employed dropouts were compared with employed high school graduates, we found their weekly income levels to be nearly identical. (Actually, the small and statistically untrustworthy difference which did appear was in favor of the dropouts, who earned a few dollars more per week than the high school graduates.) One might attribute the lack of an income advantage on the part of high school graduates to seniority differences—they had been on the job for a shorter time than the dropouts. But even after we matched dropouts and graduates according to length of time on the present job, we still found no advantage on the part of the graduates. We cannot, of course, answer the argument that the *long-range* earnings of graduates will be higher—at least not without further follow-ups of the Youth in Transition respondents. But we can say that in the short run there is little justification for the assertion that dropouts who do get jobs will earn less than their counterparts who finished high school.

There is also little justification for the view that dropouts get less satisfying jobs. Three-quarters of the dropouts rated themselves "quite satisfied" or "very satisfied" with their jobs, while two-thirds of the graduates expressed similar levels of satisfaction. Additional ratings of job characteristics, reported in Chapter 8, showed little in the way of consistent differences between dropouts and graduates; certainly it was not the case that dropouts showed less job satisfaction than graduates.

Implications of This Research

Dropouts, like unemployed workers or highway fatalities, make wonderful "statistics." It is hard to measure learning very well, and even harder to measure such nebulous concepts as self-esteem and/or self-development. By comparison, it is a simple matter to measure dropping out; and statistics on dropout rates can be communicated easily to voters, school board members, legislators, and (as we saw in Chapter 1) leaders in the national administration. Thus the temptation is to treat dropping out as if it were a problem in its own right—something to be reduced and eventually eliminated. Everyone agrees that highway fatalities are tragic and should be reduced. Is it not the same for dropping out of school?

We have argued that it is not the same, for dropping out is not primarily a problem in its own right, but rather a symptom of other problems or limitations. Treating a symptom may be easier—and in the short run perhaps more satisfying—than treating the underlying problems. Nevertheless, it may in this instance do more harm than good for two reasons. First, the treatment has some unpleasant side effects, as we shall try to point out in a moment. Second, treating the symptom may distract us from the more basic problems.

CURBING THE "ANTI-DROPOUT CAMPAIGN"

Over the past decade it has been a part of the national educational policy to try to prevent dropping out of high school, and that policy has been reflected in what we have called the "anti-dropout campaign." In our view that campaign ought to be sharply curtailed, for at least three reasons:

1. There is little evidence to support many of the claims of the anti-dropout campaign, and what evidence there is has sometimes been badly abused in order to make it more convincing. The "after-only" comparison of dropouts and stayins (sometimes *all* stayins, including those who go on to college) can be terribly misleading, for the implication is clear that if the potential dropout only stays in school then he can be just like the rest of the graduates. In fact, it simply is not so; by the time he reaches tenth or eleventh grade the potential dropout usually has basic problems and limitations that will not be "cured" by another year or two of high school.

2. Meanwhile, the campaign is giving dropouts a bad name. Most dropouts have become convinced that their action was probably a mistake, and that eventually they had better complete work for a diploma. They feel that their parents, and often other people whose opinions matter, disapprove of their dropout status. We speculated in Chapter 1 that the anti-dropout campaign may have some features of a self-fulfilling prophecy; one of the side-effects of downgrading the status of dropouts may be to encourage employers to make the diploma a requirement when it need not be.

3. The anti-dropout campaign can have the effect of eroding credibility. No doubt some young men are persuaded or partly persuaded by it; but one wonders how many others see through the oversimplifications and become still more skeptical and "turned off" by what they perceive as propaganda. This is not simply a matter affecting potential dropouts; nearly everyone is exposed to the television campaign, and many of our brightest and most perceptive young people may view it as one more instance of heavy-handed manipulation by "the establishment."

We cited in Chapter 8 a report of dropout research that was undertaken to provide data for use in high school guidance. The summary comments by the authors are so relevant to the present discussion that we will repeat them briefly here:

> It was hoped that the results would reveal that the non-college high school graduate (the control) was much better off than the high school dropout as far as future employment and earnings are concerned. Large differences in this area might help to dissuade some students from leaving high school before graduation. . . .
>
> Unfortunately, the results were not consistent with these expectations. Not only were the male dropouts earning as much as the controls, but they had been earning it longer. . . . (Combs and Cooley, 1968, pp. 361–362)

It had been *hoped* that the dropouts would look bad so that the evidence might be used to *dissuade* other potential dropouts, but *un-*

fortunately the data did not come out that way. To the authors' credit, they reported their unexpected findings in a clear and straightforward manner. Nevertheless the anti-dropout campaign continues unabated, leaving us with a nagging question: Why should we sponsor research on "the dropout problem" if we have already made up our minds about the matter, and if we are going to campaign against dropping out no matter how the research comes out?

THE NEED FOR EARLY INTERVENTION

We said at the outset of this chapter that dropping out is a symptom which signifies a mismatch between certain individuals and the typical high school environment. In principle, the mismatch could be resolved by (a) changing the individuals so that they are better able to fit into the high school environment, (b) changing the high school environment, or (c) changing both. We think there is room for change on both sides.

Among the important elements in the mismatch between potential dropouts and the high school environment are individual limitations in academic ability, past scholastic failure, and patterns of delinquent behavior. These are not problems that are likely to be resolved in high school, and simply persuading a young man to remain through the last year or two of school is not going to make much of a difference along these dimensions. But early intervention, in elementary school and perhaps much earlier, may overcome many of the problems which are deeply ingrained by the time an individual is ready to drop out of high school.

TWELVE YEARS OF SCHOOLING—IS IT IDEAL FOR EVERYONE?

Even if we hope eventually to reduce or eliminate experiences of early school failure and other problems which are presently associated with dropping out, it is still worth asking whether our current approach to high school education is ideal. Is it clear that we should prescribe twelve or more years of uninterrupted schooling for virtually all young people in the United States? The campaign against dropping out seems based on the assumption that everyone needs at least twelve years of formal education. But the research reported here has led us to question that assumption. We have found that some young men can manage reasonably well on the basis of ten or eleven years of education. Perhaps others would do so if they were not branded as "dropouts."

Certainly there are alternatives to a twelve-year diploma: perhaps one based on ten years would be sufficient. Young people wishing to enter college might spend the years equivalent to grades eleven and twelve in publicly supported college preparatory academies. Others might enter one-year or two-year vocational training or work-study programs; some such programs could be publicly operated, and some might be privately operated in conjunction with a system of publicly-supported tuition vouchers. Still other young people might choose to go directly into the world of work after their tenth-grade graduation—some to return to part-time or full-time education after a year or two or three. The recent growth of community colleges with their

wide-ranging course offerings, flexible time schedules, generous enrollment policies and low tuition rates suggests that there is a growing need for this sort of educational freedom of opportunity.

In a world of rapidly changing technology with its emphasis on continuing education and periodic retraining, there is less and less reason to maintain the traditionally sharp boundary between the role of student and the later role of worker. Shortening the prescribed minimum period for full-time uninterrupted schooling might be a positive step toward new patterns of lifetime education in which individuals can choose for themselves among a wide range of "educational life-styles." If such changes would reduce the credential value attached to high school diplomas, all the better. One of the fortunate side effects of the anti-dropout campaign has been the tendency to confuse education with credentials; any step in the opposite direction could have a salutary effect on our whole educational establishment.

The above notions are speculations triggered by some of our findings; we are not presenting them as thoroughly researched proposals. Our purpose is simply to illustrate that there are potentially viable alternatives to the traditional twelve-year program of study which we now urge upon practically every teenager. The basic point, in our view, is that such alternatives should be given serious consideration.

Concluding Comments

We began this research with the recognition that a number of very different outcomes were possible. We might have found predominantly "bad" effects from dropping out, and then we would have concluded that vigorous efforts to discourage dropping out are warranted. But this is not what we found.

At the other extreme, we might have found mostly "good" effects from dropping out, leading to the conclusion that dropping out should be encouraged among those having difficulty in high school. But this is not what we found either, and thus we must stress that *we are not encouraging young men to drop out of school.*

Our findings indicate that dropping out is neither especially "good" nor "bad." We find it to be a symptom, rather than a cause of new troubles or a cure for old ones.

We have stated these conclusions based on the evidence presently available. At the same time we recognize the limitations of a study which follows young men only until the age of 19 or 20. We are hopeful that further follow-ups of the Youth in Transition respondents will be possible, thus permitting an assessment of dropouts and stayins in their mid-twenties and perhaps still later.

Meanwhile, however, we must work with the findings at hand. Given those findings, we propose the following: (a) The anti-dropout campaign should be sharply curtailed. (b) Greater emphasis should be placed on early school and pre-school interventions. (c) The range of educational options for young people aged 16 to 18 should be broadened, and serious consideration should be given to reducing the number of years necessary for attaining a high school diploma.

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